Environment Canada
Conservation and Protection

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Inland Waters Directorate
Western and Northern Region

Direction générale des eaux intérieures
Région de l'ouest et du nord

92-00341/

WATER QUALITY BRANCH
WESTERN AND NORTHERN REGION

WATER QUALITY MONITORING

STATION PROFILES

PREFACE

Monitoring of water quality by the federal government is mainly limited to matters of national interest including interprovincial and international waters, national parks, northern territories and transboundary issues. In addition the collection of water quality data is carried out by means of agreements between the provinces and the federal government.

This document, entitled "Station Profiles" serves as an information source to Water Quality Branch monitoring activities. Both active and discontinued water quality sites are referenced. The information contained herein is subject to annual updating (November).

This book of station profiles is divided up into the following sections:

- ALBERTA WATER QUALITY MONITORING
- SASKATCHEWAN WATER QUALITY MONITORING
- MANITOBA WATER QUALITY MONITORING
- APPENDIX A - Discontinued Alberta Water Quality Sampling Sites
- APPENDIX B - Discontinued Saskatchewan Water Quality Sampling Sites
- APPENDIX C - Discontinued Manitoba Water Quality Sampling Sites

This document is not intended to stand alone but should be used in conjunction with the annual "Project Description" book of the Branch (prepared in March) which provides the reader with a description of the resources, objectives, sampling parameters and other pertinent information for all projects within the WQB-W&NR. The map reference numbers used in this book are taken from Appendix A of the "Project Description" book.

Wm. D. Gummer
Chief
Water Quality Branch

April 1, 1991

ALBERTA

WATER QUALITY MONITORING

Environment Canada
Water Quality Branch
Alberta District Office
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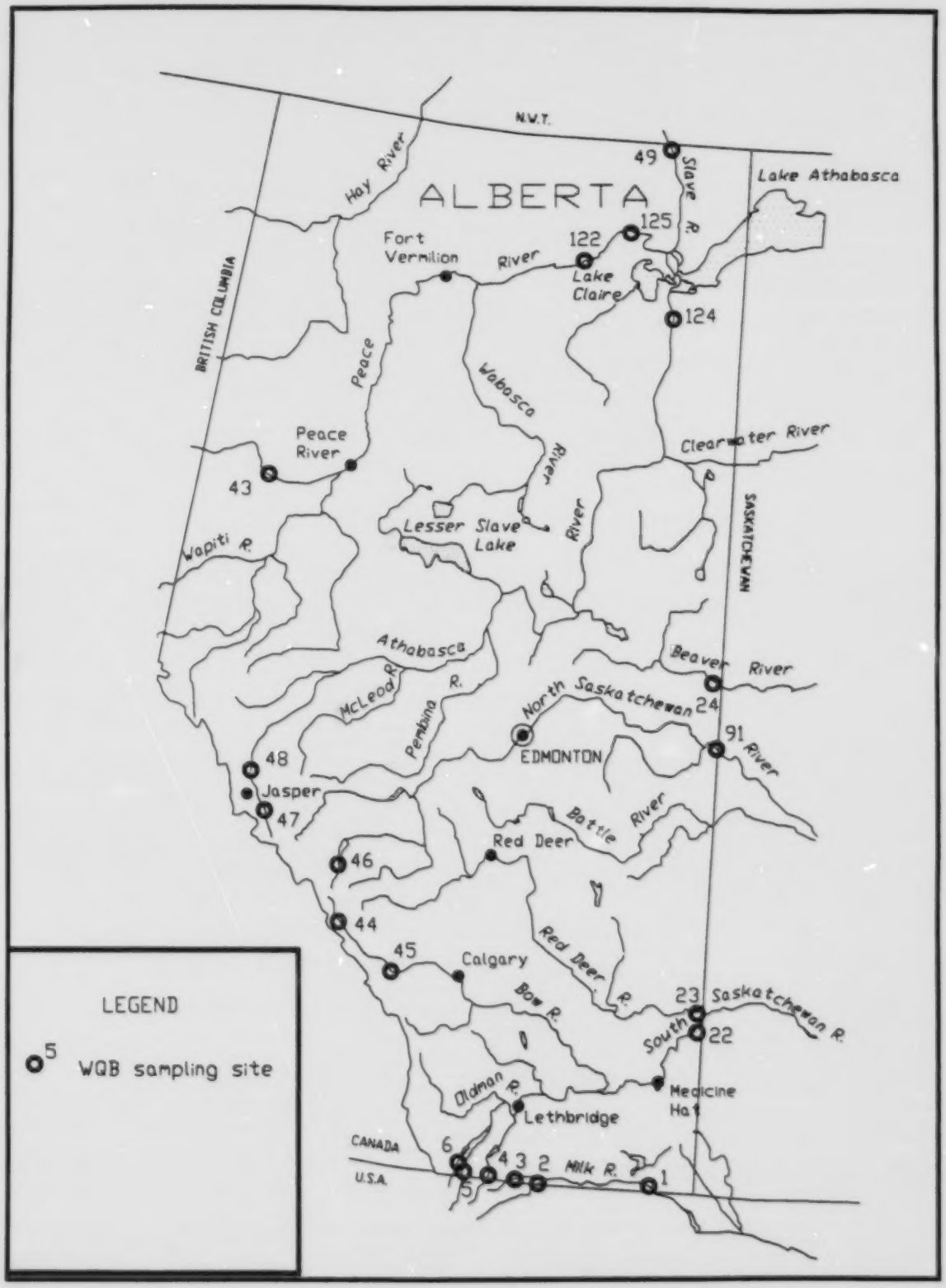

N.W.T.
ALBERTA
49
Slave R.
Lake Athabasca
Hay River
125
122
Fort Vermilion
River
Lake Claire
124
BRITISH COLUMBIA
Peace
Wabasca
River
Clearwater River
Peace River
43
Lesser Slave Lake
River
SASKATCHEWAN
Wapiti R.
Athabasca
Beaver River
McLeod R.
Pembina R.
North Saskatchewan
24
91
River
EDMONTON
48
Jasper
47
Battle River
Red Deer
46
44
45
Calgary
Red Deer R.
23
Saskatchewan R.
Bow R.
South
22
Oldman R.
Medicine Hat
Lethbridge
CANADA
U.S.A.
6
4 3 2
Milk R.
1
5
LEGEND
5 WQB sampling site

ALBERTA WATER QUALITY MONITORING

PROJECT 311 — Federal Monitoring in Alberta

1. *Milk River near Eastern Crossing of International Boundary*
2. *Milk River near Western Crossing of International Boundary*
3. *North Milk River near the International Boundary*
4. *St. Mary River near International Boundary*
5. *Belly River at Highway 6*
6. *Waterton River at Hwy. 6 near Waterton Lakes National Park*
43. *Peace River at Highway 2, Dunvegan*

Samples are collected monthly for a wide variety of parameters. Unusual values may be followed up with re-surveys. Governments concerned are notified of potential and real problems.

PROJECT 314 — National Parks Monitoring Agreements

44. *Bow River at Highway 1 above Lake Louise*
45. *Bow River approximately 4.5 km above Canmore*
46. *North Saskatchewan River at Whirlpool Point*
47. *Athabasca River at Highway 93A, Athabasca Falls*
48. *Athabasca River at Highway 16 Bridge below Confluence with Snaring River*

This network was established to determine surface water quality, identify potential issues and to provide a basis for the management of Park waters. These monitoring sites are also of significance as they are the headwaters of major river systems. Stations are sampled monthly.

PROJECT 315 — Prairie Provinces Water Board Monitoring (Alberta - Saskatchewan boundary)

22. *South Saskatchewan River at Highway 41*
23. *Red Deer River at Bindloss*
24. *Beaver River at Beaver Crossing*
91. *North Saskatchewan River at Highway 17*

One other site along the Alberta-Saskatchewan border is described in the Saskatchewan section of this book. For these interprovincial rivers the Water Quality Branch provides data, interpretation, and advice to the Prairie Provinces Water Board (PPWB). Stations are sampled monthly.

PROJECT 392 — Interjurisdictional Network Monitoring by WRB

49. Slave River at Fitzgerald

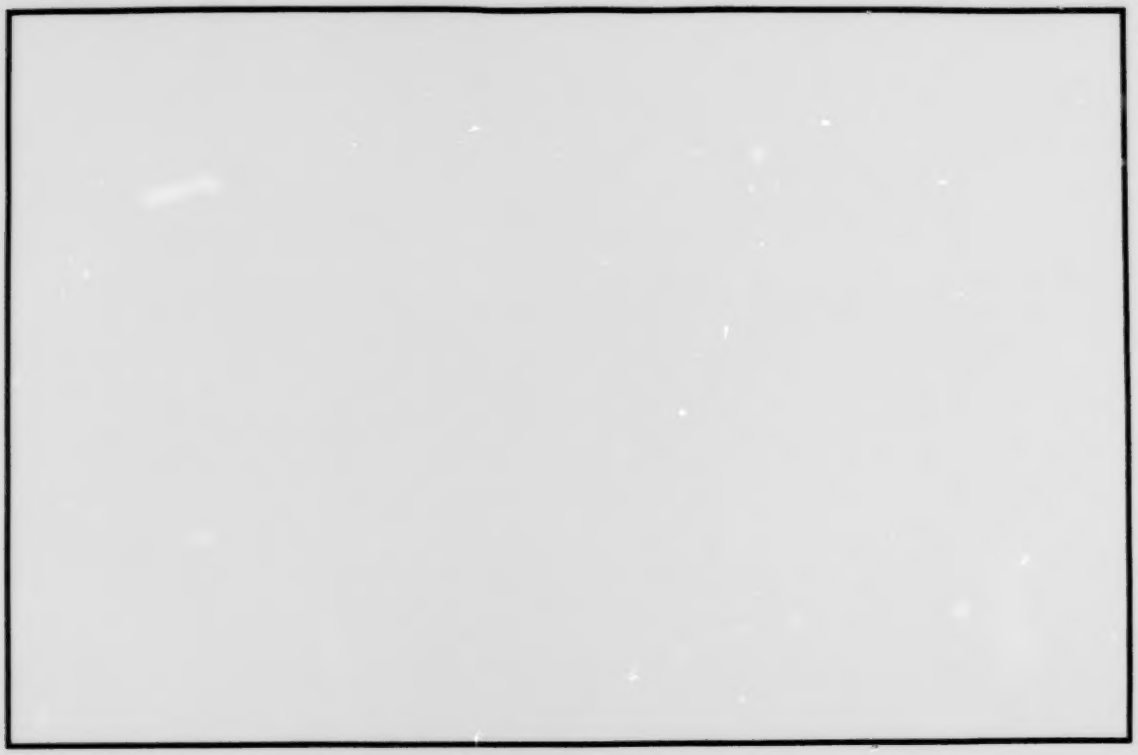
This interjurisdictional site is monitored on a monthly basis from the Northwest Territories Programs office in Yellowknife.

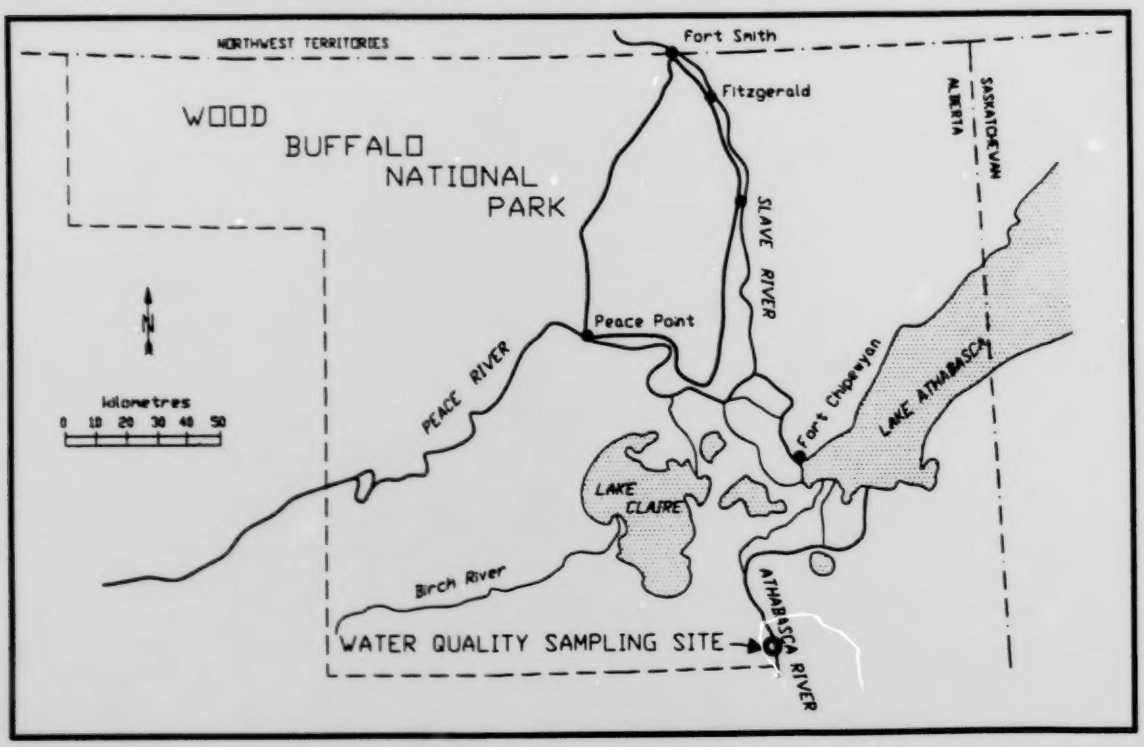
PROJECT 325 - Wood Buffalo National Park Monitoring by Parks Canada

122. Peace River at Garden Creek
123. Peace River at Peace Point
124. Athabasca River at 27 Baseline

Three sites are monitored on a monthly basis for Peace-Athabasca delta baseline data.

Athabasca River at 27 Baseline





Athabasca River at 27 Baseline

NAQUADAT NUMBER: 00AL07DD0001 **WSC REFERENCE NUMBER**: 07DD001

PROJECT REFERENCE NUMBER: 325 **SUBMITTER I.D.**: 0417

LOCATION: Latitude: 58° 20' 00" Longitude: 111° 32' 00"

Station is located approximately 14.5 km above Embarra Portage. Sampled by Parks Canada Warden Service, Wood Buffalo National Park.

STATION ESTABLISHED: August, 1989

PERIOD OF RECORD: 1969*, 1989 -

* station originally called Athabasca River approximately 9 Miles above Embarras Portage

STATION TYPE: Peace-Athabasca delta baseline station.

EXPECTED FIELD OBSERVATIONS: Awaiting sufficient accumulation of data.

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1971 -

SEDIMENT DATA: 1971 - 85

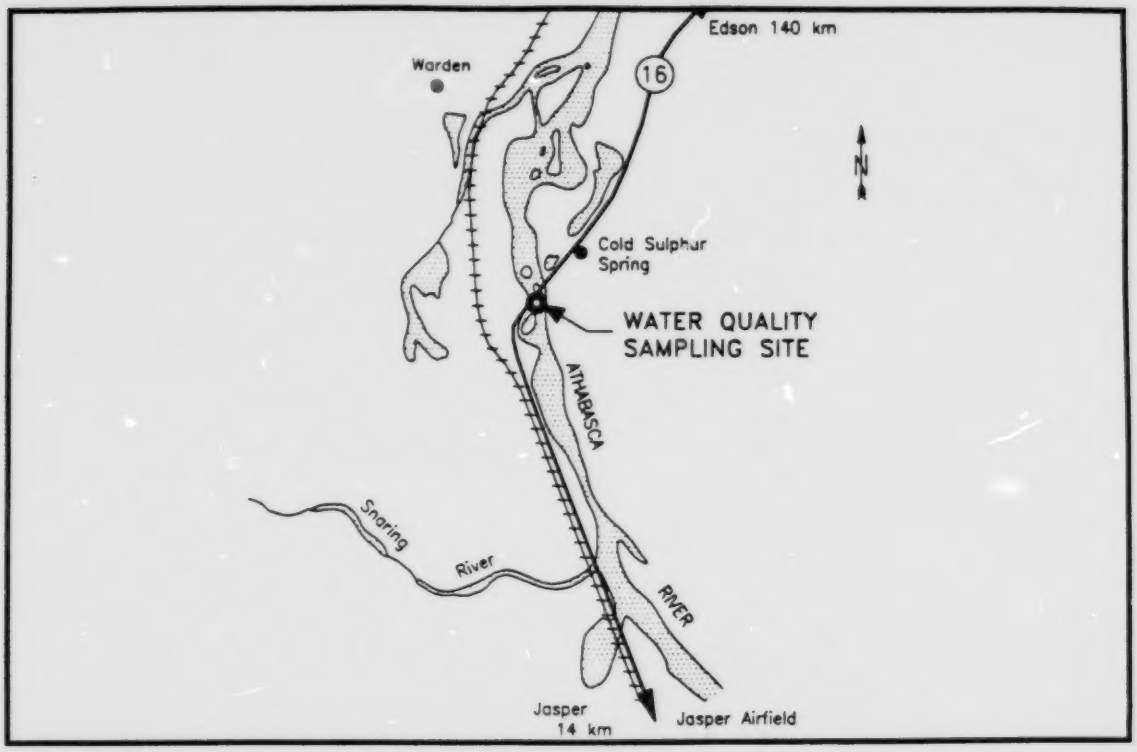
ISSUES:

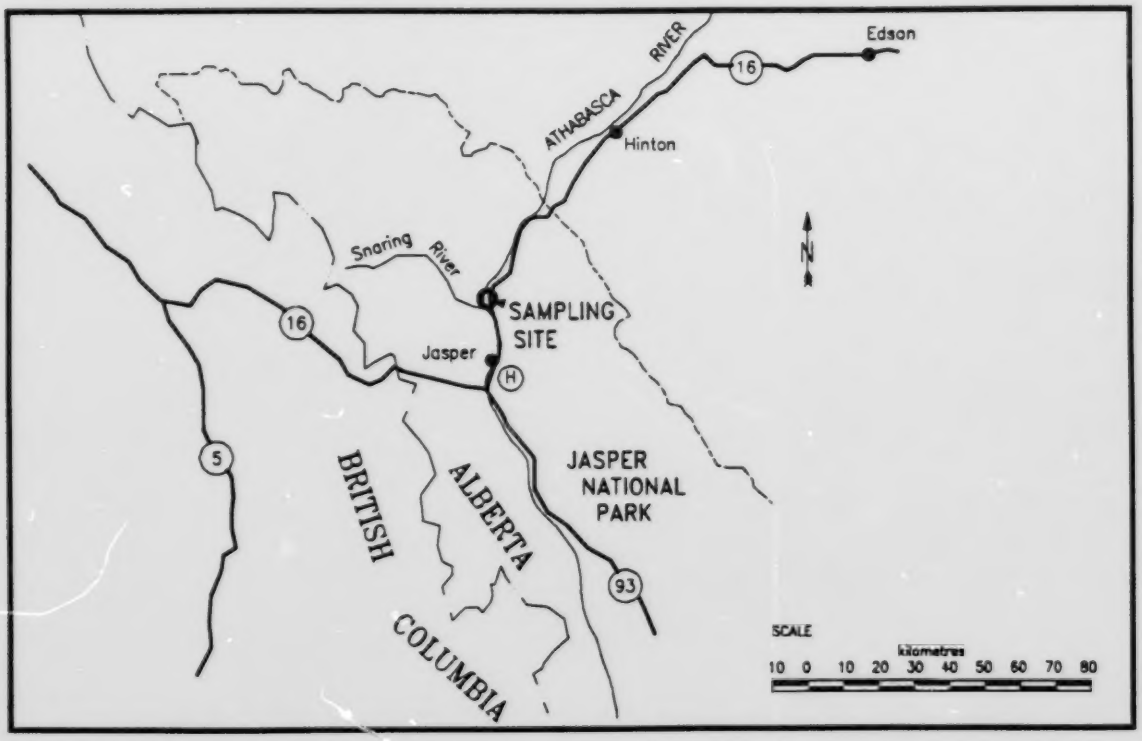
- Upstream industrial development's effects on water quality in the park.

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: L. Mottle **DATE**: December, 1990

Athabasca River at Highway 16 Bridge below confluence with Snaring River





Athabasca River at Highway 16 Bridge below confluence with Snaring River

NAQUADAT NUMBER: 00AL07AA0023 **WSC REFERENCE NUMBER**: ———

PROJECT REFERENCE NUMBER: 0314 **SUBMITTER I.D.**: 0417

LOCATION: Latitude: 53° 02' 30" **Longitude**: 118° 05' 13"

Sampling location at bridge on Highway 16 north of Jasper, Alberta, approximately 3.4 km north of the Snaring River bridge.

Sampled midstream of left channel. Ice conditions extremely variable from open water (year round) to 0.8 metres in mid-winter. Water depth may be greater than 2 metres. Usually moderate to strong winds at site. Algae on shore rocks during the summer.

STATION ESTABLISHED: June 13, 1973

PERIOD OF RECORD: 73 -

STATION TYPE: National Parks; Network (1976-77)

EXPECTED FIELD OBSERVATIONS:

	DO	pH	Turbidity	Specific Cond.	Total Coliform	Fecal Coliform	Fecal Strep.
WINTER	10.4 - 14.2	7.8 - 8.6	< 0.1 - 11	120 - 300	< 155	< 60	< 5
SPRING	10.3 - 13.4	7.6 - 8.4	0.5 - 180	120 - 300	< 70	< 10	< 30
SUMMER	9.8 - 11.2	8.0 - 8.3	9.5 - 190	120 - 300	40 - 205	< 40	< 1-90
FALL	10.5 - 12.1	7.9 - 8.5	2.5 - 55	120 - 300	1-100	< 10	< 1-15

HYDROMETRIC:

Flow at WQB site = 07AA002 (Athabasca R. below Jasper)
+ 07AA004 (Maligne River)
+ 07AA001 (Miette (as estimate of Snaring R.)

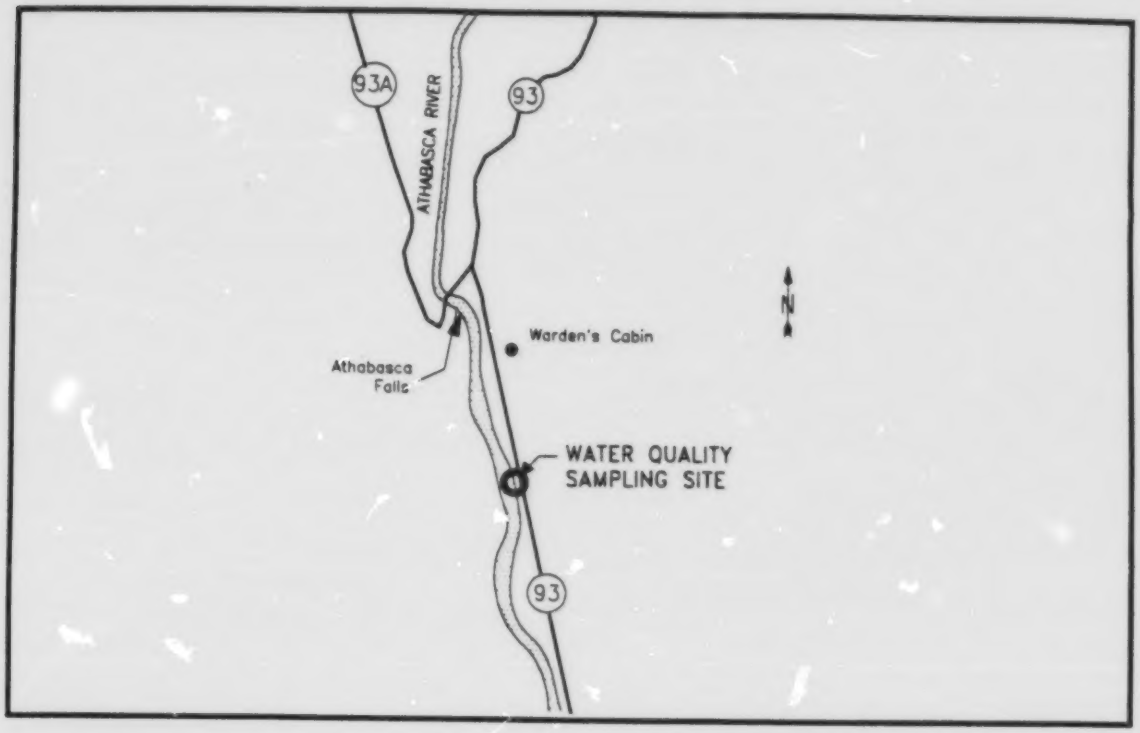
ISSUES:

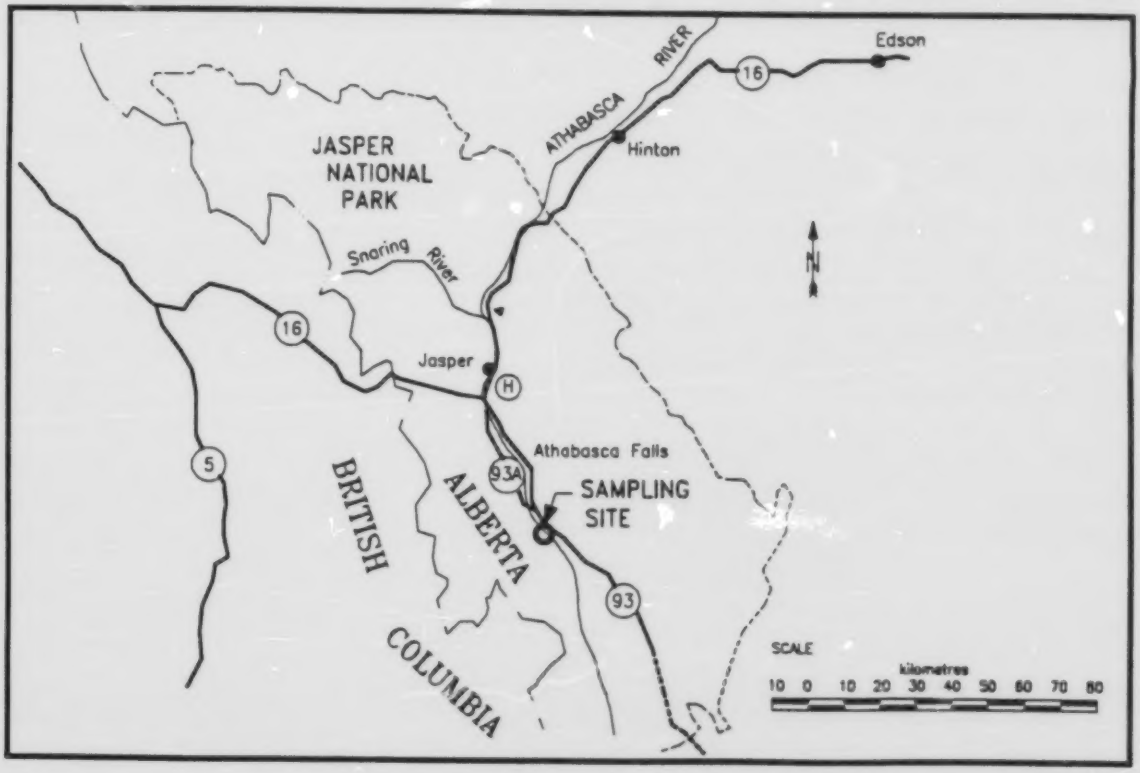
- Effluents from Jasper townsite
- Effects from campgrounds and related tourist activities in National Park.

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: H. Block **DATE**: December, 1988

Athabasca River at Highway 93A, Athabasca Falls





Athabasca River at Highway 93A, Athabasca Falls

NAQUADAT NUMBER: 00AL07AA0015 **WSC REFERENCE NUMBER**: ———

PROJECT REFERENCE NUMBER: 0314 **SUBMITTER I.D.**: 0417

LOCATION: Latitude: 52° 39' 51" Longitude: 117° 52' 50"

Sampling location is approximately 1 km above Athabasca Falls at the first point above the falls where the highway nears the river. This is approximately 37 km south of Jasper, Alberta.

Sampling is done from shore rocks near the right bank or by wading depending on water level and velocity. Water is usually open year round, however the water may be bridged with rotten ice. Ice at the edge is often shelved and slopes to the water.

STATION ESTABLISHED: August 31, 1972

PERIOD OF RECORD: 1972 -

STATION TYPE: National Parks; network (1976 - 77)

EXPECTED FIELD OBSERVATIONS:

	DO	pH	Turbidity	Specific Cond.	Total Coliform	Fecal Colifrom	Fecal Strep.
WINTER	9.5 - 13.5	7.7 - 8.4	0.1 - 7.5	180 - 220	< 1 - 5	< 1 - 5	< 1 - 40
SPRING	10.0 - 12.5	7.9 - 8.3	1.5 - 150	140 - 220	< 1 - 40	< 1 - 20	< 1 - 40
SUMMER	10.0 - 11.0	7.9 - 8.4	20 - 360	130 - 170	< 1 - 50	< 1 - 5	< 1 - 50
FALL	10.0 - 14.0	7.8 - 8.3	3 - 35	130 - 220	< 1 - 40	< 1 - 5	< 1 - 20

HYDROMETRIC:

Flow at WQB site = 07AA002 (Athabasca River below Jasper)

- 07AA004 (Whirlpool River)
- 07AA001 (Miette as estimate of Miette + Astoria)

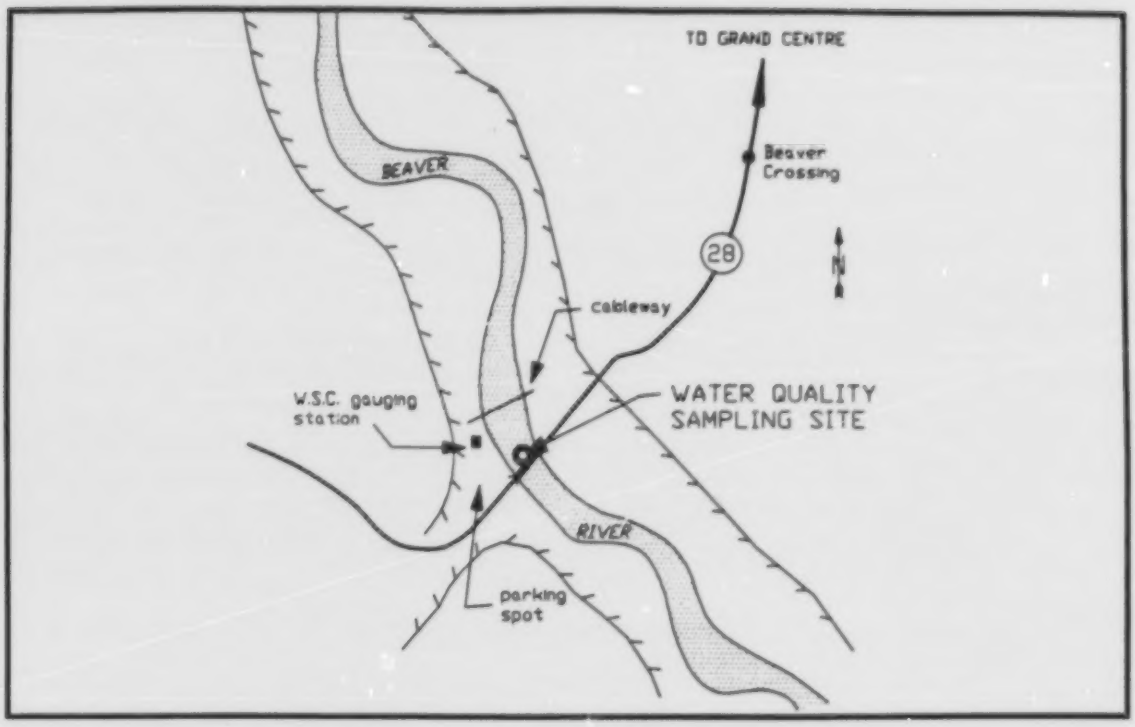
ISSUES:

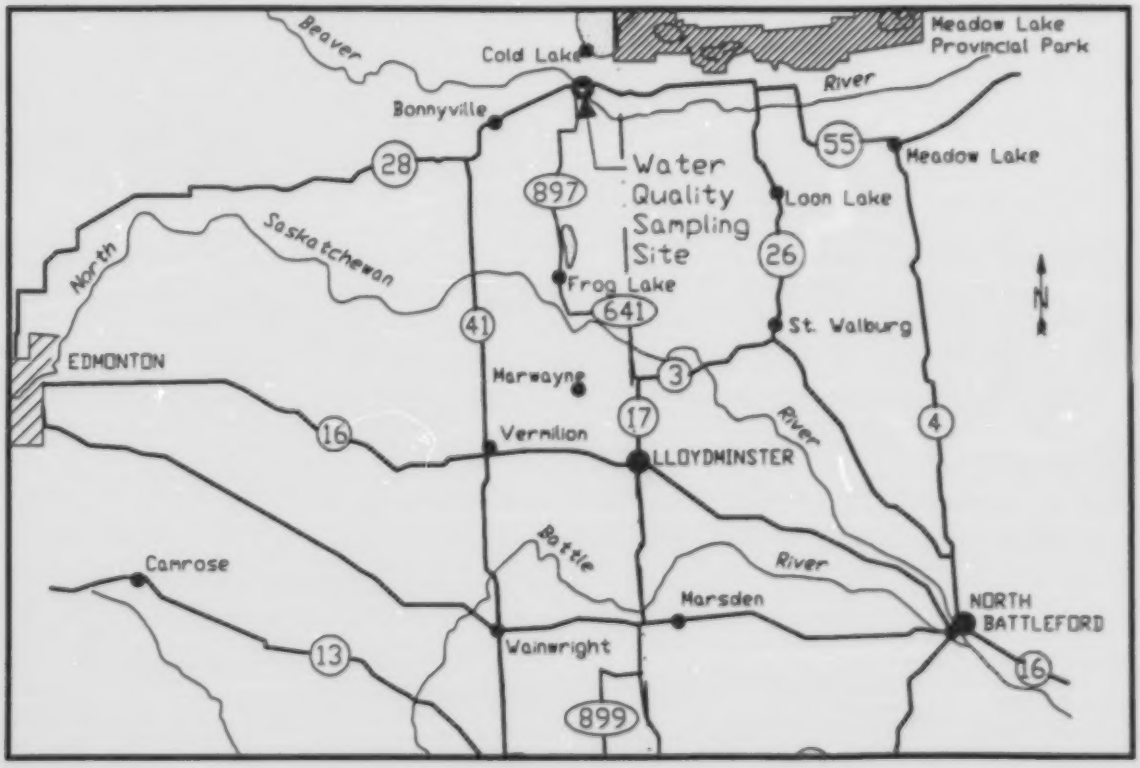
- Headwater background station.
- Developments upstream on Sunwapta River tributary: Icefields Chalet, Snowmobile Tours and Sunwapta Bungalows.
- Possible impact of tourist activities in National Park.

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: H. Block **DATE**: December, 1988

Beaver River at Beaver Crossing





Beaver River at Beaver Crossing

NAQUADAT NUMBER: 00AL06AD0001 **WSC REFERENCE NUMBER**: 06AD006

PROJECT REFERENCE NUMBER: 315 **SUBMITTER I.D.**: 462

LOCATION: Latitude: 54° 21' 15" **Longitude**: 110° 12' 42"

Sampling location is near the bridge on highway 28 approximately 2 km southwest of Beaver Crossing, Alberta. Samples are collected by wading with chest waders. During ice-cover, samples are taken 10 m upstream (north) of the bridge. Jet aircraft frequently fly overhead.

STATION ESTABLISHED:

PERIOD OF RECORD: April 1974 - Ongoing

STATION TYPE: Network, heavy metal & herbicide, PPWB.

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Specific Cond.*	*Total Coliform*	*Fecal Coliform*
WINTER	*0.2 - 6.0*	*7.4*	*5.0*	*450*	*< 2 - 40*	*< 2 - 100*
SPRING	*10.0*	*7.8*	*15.0*	*200*	*< 2 - 40*	*< 2 - 100*
SUMMER	*7.7*	*8.1*	*10.0*	*355*	*< 2 - 40*	*< 2 - 100*
FALL	*12.0*	*7.6*	*5.0*	*400*	*< 2 - 40*	*< 2 - 100*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1955 -

SEDIMENT DATA: 1974 -

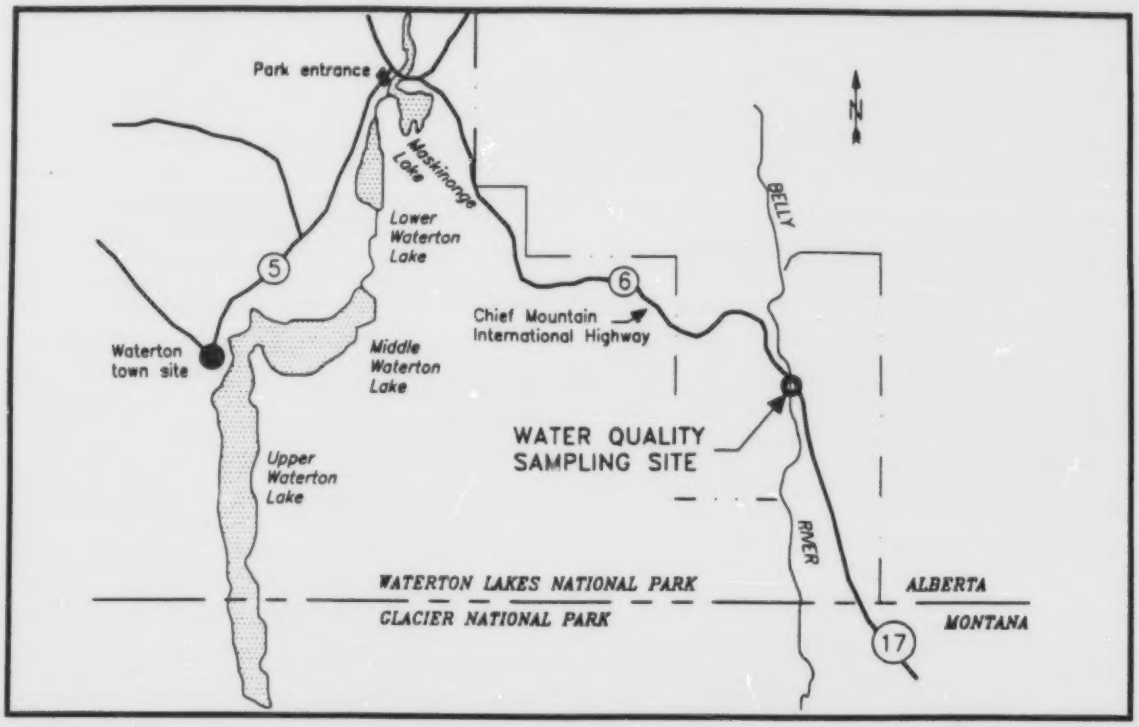
ISSUES:

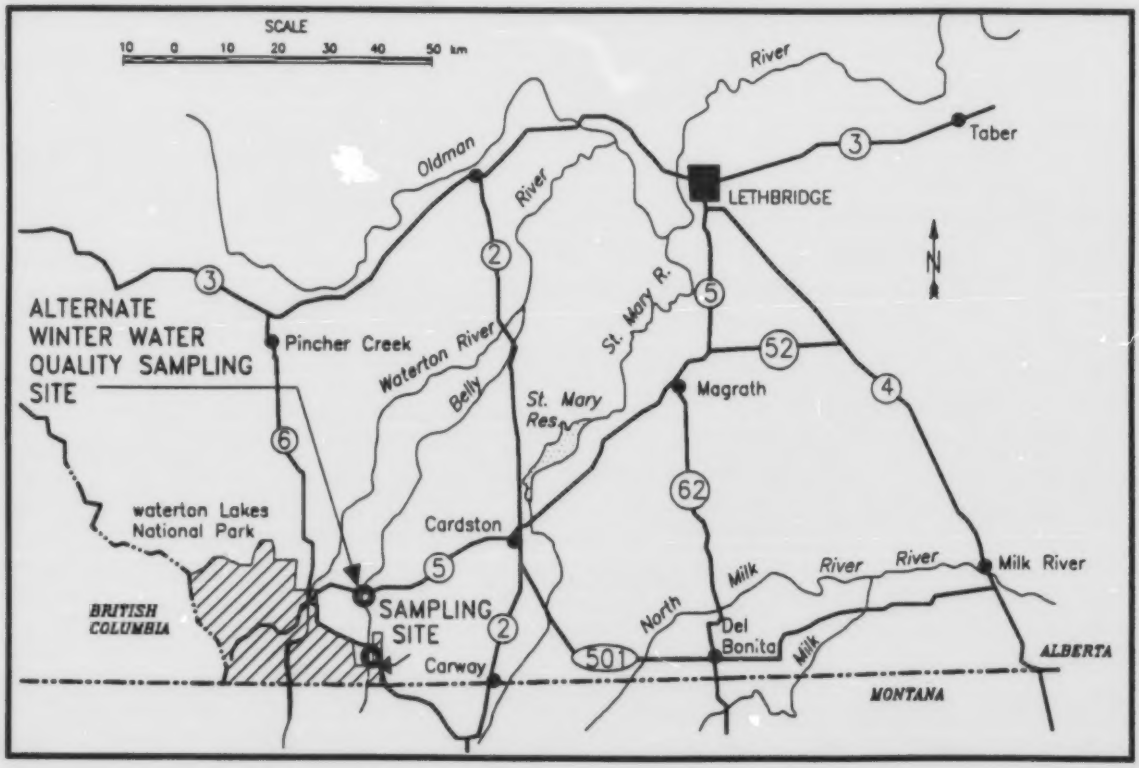
- Major interprovincial river monitored for PPWB
- Potential for trans-basin water transfer to service heavy oil industry

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: P.W. Neil **DATE**: January 26, 1989

Belly River at Highway 6





Belly River at Highway 6

NAQUADAT NUMBER: 00AL05AD0060 **WSC REFERENCE NUMBER**: ———

PROJECT REFERENCE NUMBER: 311 **SUBMITTER I.D.**: 0003

LOCATION: Latitude: 49° 03' 06" **Longitude**: 113° 41' 07"

Sampling location is at bridge on Highway 6 (Chief Mountain Highway) approximately 17 km from Highway 5 junction. Access in winter may only be through Birdseye Butte Road (enter from Highway 5 approximately 2 km west of Belly River bridge west of Mountain View, Alberta). **Note**: Birdseye Butte Road has been closed due to a land dispute. Contact Waterton Park Warden service regarding winter accessibility at time of visit.

Station is sampled by wading from left bank. Usually open water year round. Winter access may be difficult or impossible due to road and snow conditions. When access is impossible samples may be taken at Highway 5 bridge.

Occasional sampling at Highway 5 was started February 1990. NAQUADAT No. 00AL05AD0006. This station will be sampled concurrently with 00AL05AD0060 when possible during 1990/91 to compare results.

STATION ESTABLISHED: January 8, 1974

PERIOD OF RECORD: 1974 -

STATION TYPE: National Parks (1974-76), Interjurisdictional (1976-)

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Specific Cond.*	*Total Coliform*	*Fecal Coliform*
WINTER	*10.0 - 13.0*	*7.7 - 8.4*	*0.5 - 3*	*180 - 250*	*< 4*	*< 4*
SPRING	*10.0 - 12.5*	*7.6 - 8.2*	*1.0 - 45*	*130 - 250*	*< 10*	*< 6*
SUMMER	*8.5 - 10.0*	*7.5 - 8.0*	*0.5 - 20*	*130 - 220*	*< 10*	*< 6*
FALL	*9.0 - 12.5*	*7.4 - 8.4*	*0.2 - 5*	*160 - 250*	*< 4*	*< 2*

HYDROMETRIC:

Flow at WQB site (November to April) = 05AD005 (Belly River at Mountain View)

May to October(approx) + 05AD017 (Mountain View Irrigation Canal)

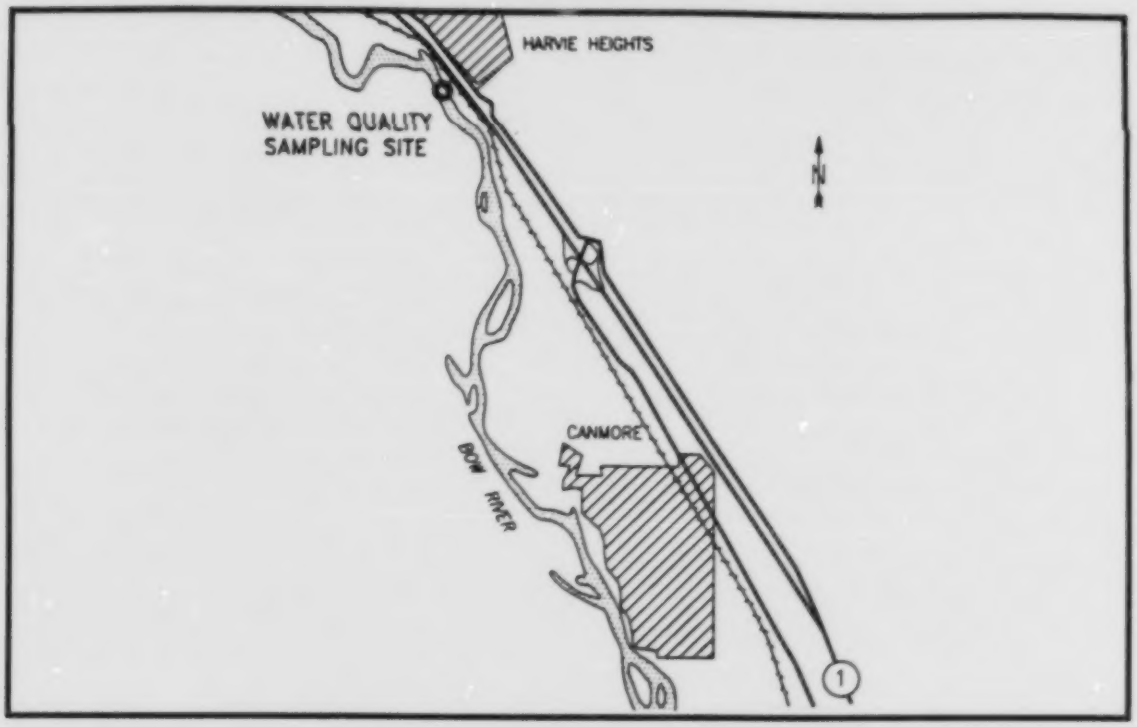
ISSUES:

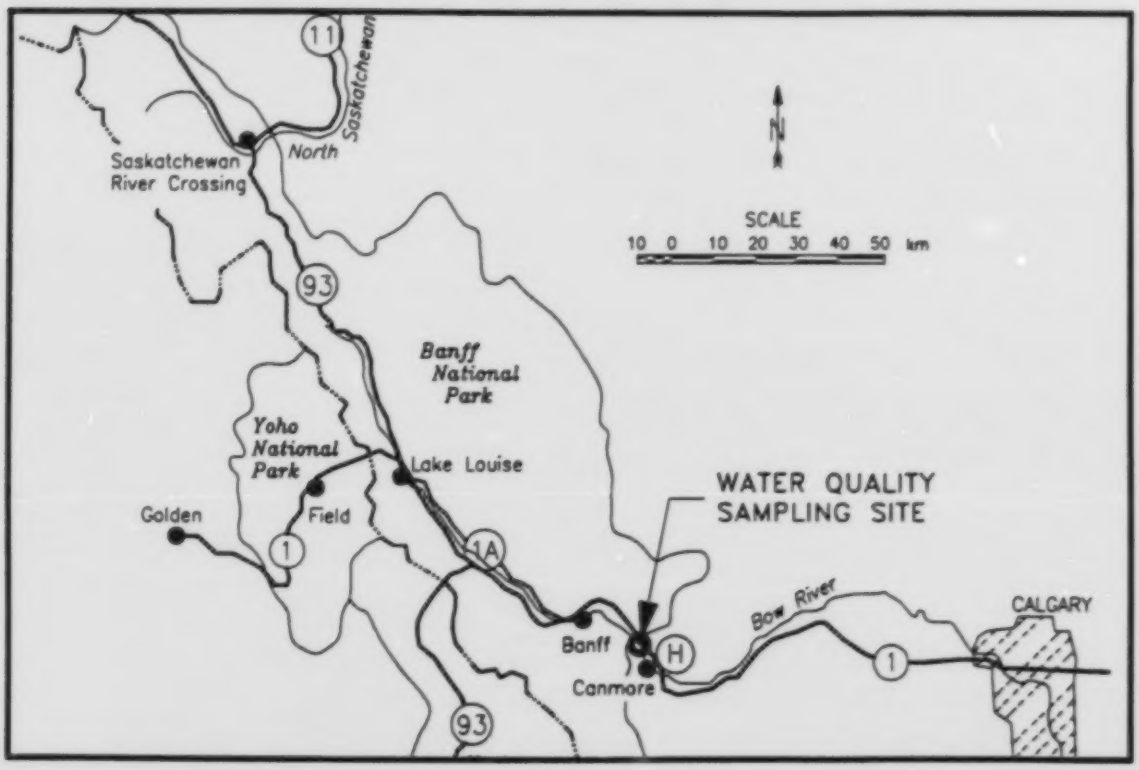
- Interjurisdictional station.
- Headwaters type for National Park.
- Indian Reservation, timber and oil lease on land along left bank.

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: H. Block **DATE**: December, 1988

Bow River approximately 4.5 km above Canmore





Bow River approximately 4.5 km above Canmore

NAQUADAT NUMBER: 00AL05BE0013 **WSC REFERENCE NUMBER**: ———

PROJECT REFERENCE NUMBER: 0314 **SUBMITTER I.D.**: 0417

LOCATION: Latitude: 51° 07' 22" Longitude: 115° 23' 12"

Sampling location is reached by walking across railway tracks at the point across from Gateway Motel sign at Harvie Heights, then via trail through willows to steep bank. Sampled by wading above island. Usually open water year round. Check for thin or shelved ice at shore. Watch for rising water levels. Algae on bottom rocks, slippery when wading.

STATION ESTABLISHED: June 20, 1973

PERIOD OF RECORD: 1973 - 76, 1978 -

STATION TYPE: National Parks

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Spec. Cond.*	*Total Coliform*	*Fecal Coliform*	*Fecal Strep*
WINTER	*9.5 - 13.0*	*7.8 - 8.4*	*0.2 - 4*	*300 - 360*	*2 - 1000*	*< 200*	*< 90*
SPRING	*10.0 - 12.0*	*7.9 - 8.4*	*0.5 - 46*	*180 - 355*	*2 - 2000*	*< 100*	*< 90*
SUMMER	*9.4 - 10.6*	*8.0 - 8.4*	*1.0 - 25*	*190 - 270*	*6 - 1000*	*< 600*	*< 100*
FALL	*9.4 - 13.0*	*7.8 - 8.4*	*0.2 - 5*	*240 - 310*	*2 - 800*	*< 300*	*< 250*

Bacteria counts may be high after rainstorms and during high tourist seasons, December to March and May to October.

HYDROMETRIC:

Flow at WQB site = 05BB001 (Bow River at Banff)
+ 05BC001 (Spray River at Banff)
+ 05BD004 (Cascade Power Diversion near Banff)

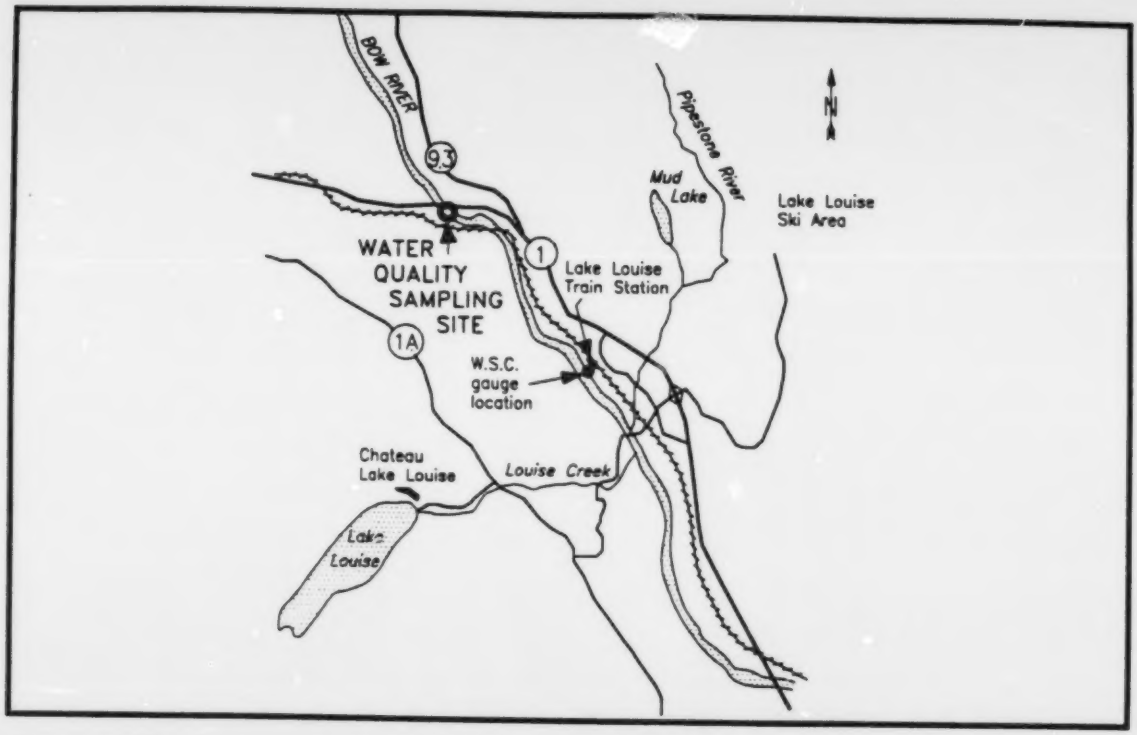
ISSUES:

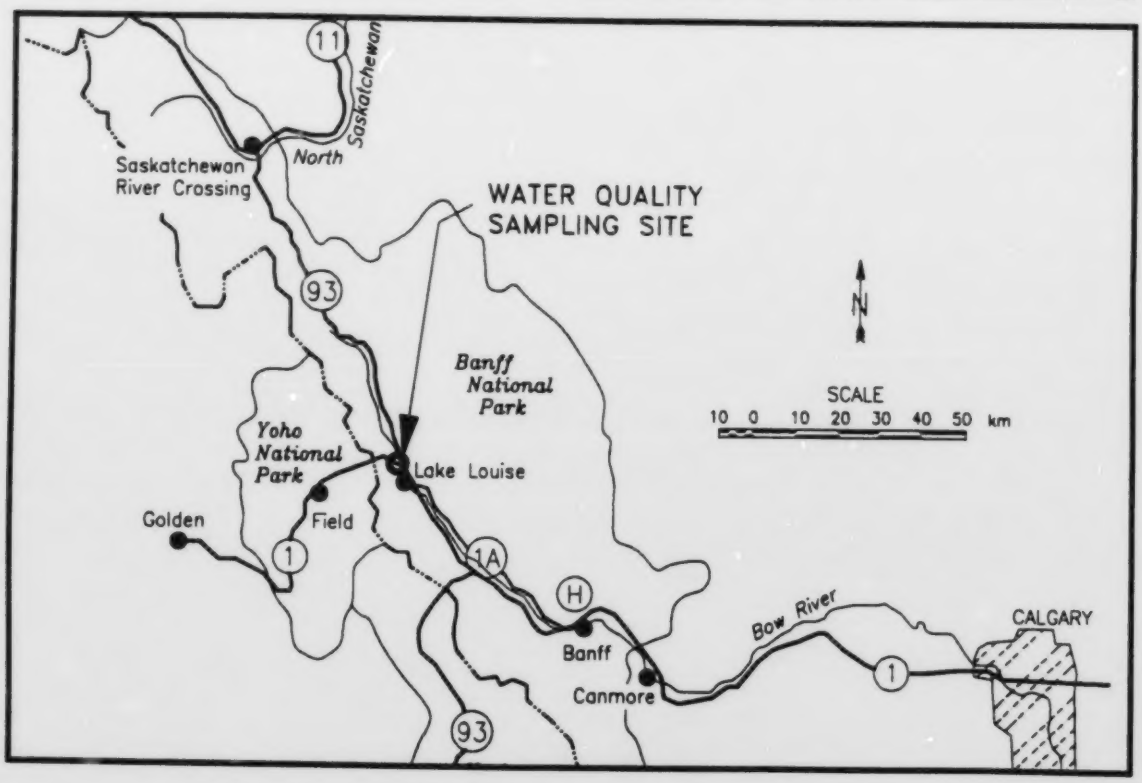
- Parks boundary station.
- Impact of tourist activities within park.
- Effluent from Banff townsite sewage treatment plant.

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: H. Block **DATE**: December, 1988

Bow River at Highway 1 above Lake Louise





Bow River at Highway 1 above Lake Louise

NAQUADAT NUMBER: 00AL05BA0011 **WSC REFERENCE NUMBER**: 05BA001

PROJECT REFERENCE NUMBER: 314 **SUBMITTER I.D.**: 0417

LOCATION: Latitude: 51° 26' 35" **Longitude**: 116° 12' 42"

Sampling location is at the Highway 1 bridge approximately 0.8 km west of the Highway 93 North (to Jasper) interchange.

Sampled by wading in summer upstream of bridge. Winter sample taken through ice in thin ice channel **underneath** bridge. **DO NOT** attempt to take sample from open leads either upstream or downstream of bridge. Heavy snow accumulations do not allow the formation of thick, solid ice leading to these areas.

STATION ESTABLISHED: June 2, 1975

PERIOD OF RECORD: 1975 -

STATION TYPE: National Parks (1975 - 76,1978 -), network (1976 - 77)

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Spec. Cond.*	*Total Coliform*	*Fecal Coliform*	*Fecal Strep.*
WINTER	*9.5 - 13.6*	*7.5 - 8.3*	*< 0.1 - 2*	*150 - 205*	*< 4*	*< 1*	*< 20*
SPRING	*10.0 - 12.0*	*7.9 - 8.2*	*< 0.1 - 7.5*	*140 - 230*	*< 10*	*< 10*	*< 10*
SUMMER	*8.9 - 10.2*	*8.0 - 8.4*	*0.5 - 8.0*	*140 - 165*	*< 10*	*< 5*	*< 30*
FALL	*9.7 - 13.2*	*7.7 - 8.2*	*< 0.1 - 5.5*	*140 - 165*	*< 30*	*< 5*	*< 20*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1910 - 20, 1923 - 30, 1964 -

SEDIMENT DATA: Not available

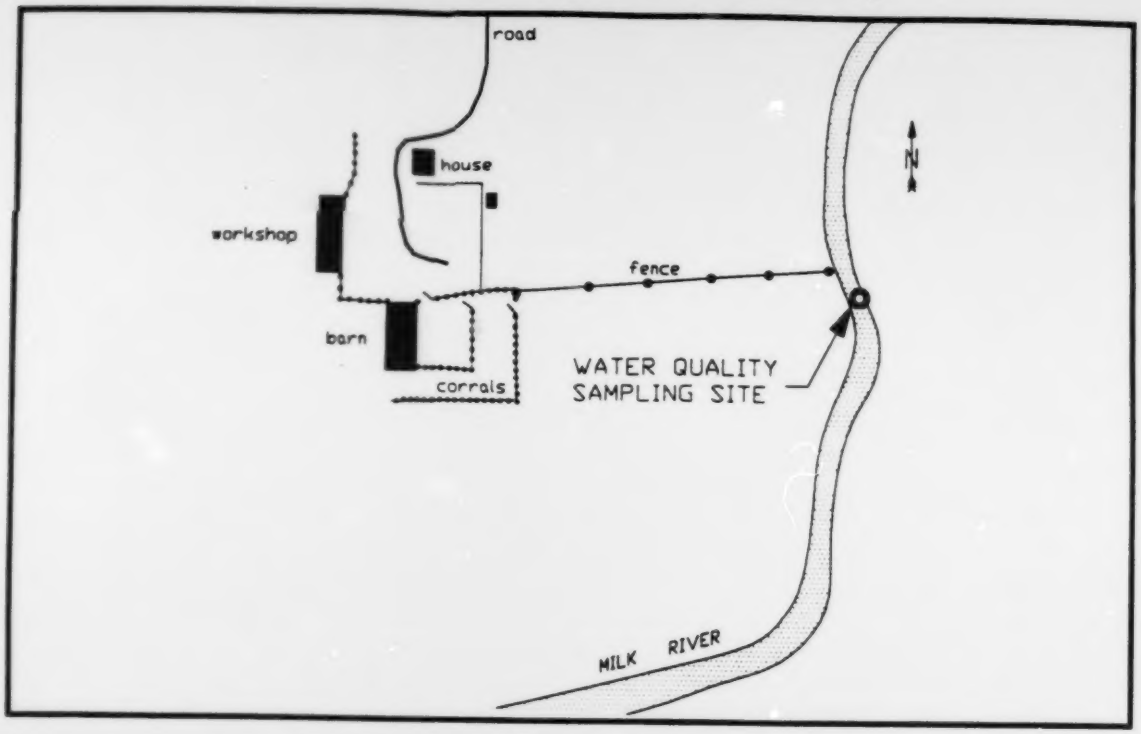
ISSUES:

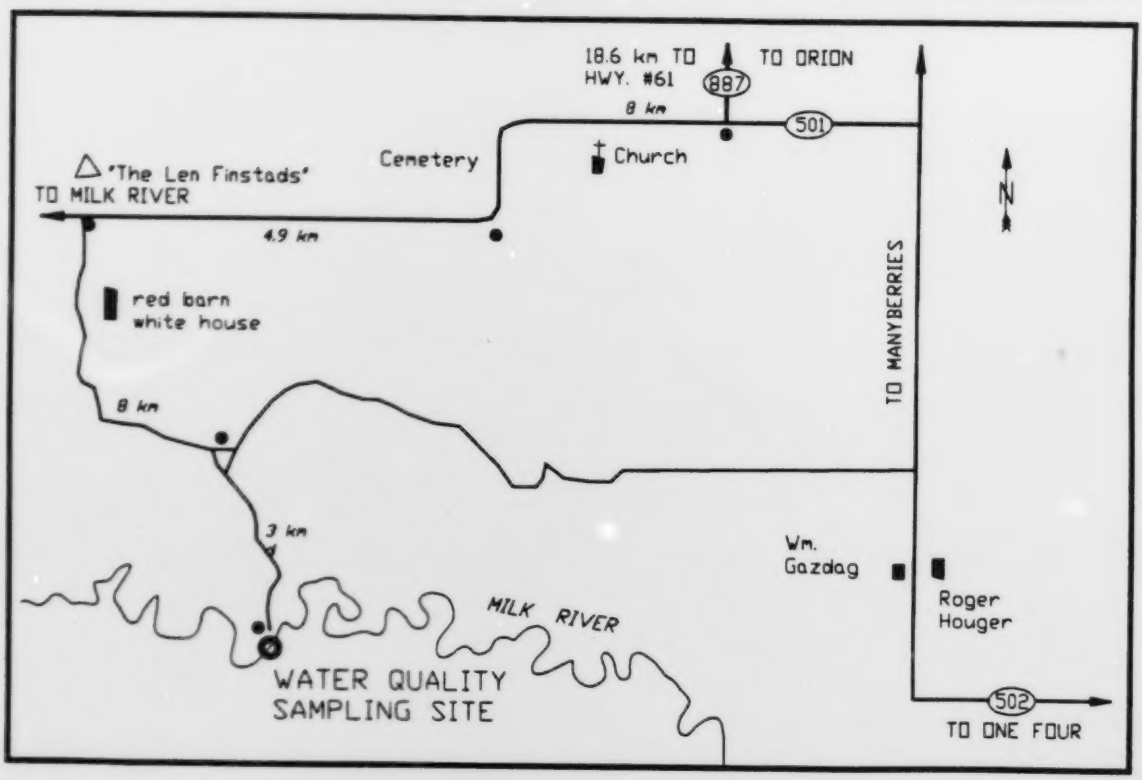
- Headwaters, background station.
- Developments upstream: Num-ti-jah Lodge at Bow Lake; campground and hostel at Mosquito Creek.
- Possible impact of tourist activities in National Parks.

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: H. Block **DATE**: December, 1988

Milk River near Eastern Crossing of International Boundary





Milk River near Eastern Crossing of International Boundary

NAQUADAT NUMBER: 00AL11AA0003 WSC REFERENCE NUMBER: 11AA031

PROJECT REFERENCE NUMBER: 311 SUBMITTER I.D.: 0003

LOCATION: Latitude: 49° 07' 27" **Longitude**: 110° 53' 39"

Sample location SE of ranch headquarters of Pinhorn Grazing Reserve, 11 km south of Highway 501, approximately 5 km west of Pendant Oreille Cemetery. Turn south at mailbox "The Len Finstads."

Sampled by wading just upstream of fence-line running east from corrals by east side of main barn. Be sure to **close corral gates**. Watch for bulls in field. **Rattle snakes** have been sighted in this area. Watch for quicksand and holes in river bottom when wading. Main channel is usually along right bank. Very low winter flows.

STATION ESTABLISHED: August 25, 1960

PERIOD OF RECORD: 1960 -

STATION TYPE: Interjurisdictional

EXPECTED FIELD OBSERVATIONS: (allow 2 months latitude either way)

	DO	*pH*	*Turbidity*	*Specific Cond.*	*Total Coliform*	*Fecal Coliform*
WINTER	*1.0 - 15.0*	*7.2 - 8.6*	*0.1 - 180*	*300 - 2900**	*< 500*	*< 25*
SPRING	*7.5 - 12.5*	*7.8 - 8.5*	*50 - 500*	*220 - 605*	*< 300*	*< 300*
SUMMER	*7.5 - 9.5*	*7.8 - 8.4*	*5 - 160*	*190 - 610*	*< 5 - 360*	*< 5 - 360*
FALL	*9.0 - 13.0*	*7.9 - 8.8*	*1 - 35*	*765 - 915*	*< 100*	*< 60*

** specific conductance is highest in winter low flow period.*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1909 -

SEDIMENT DATA: 1975 - 76

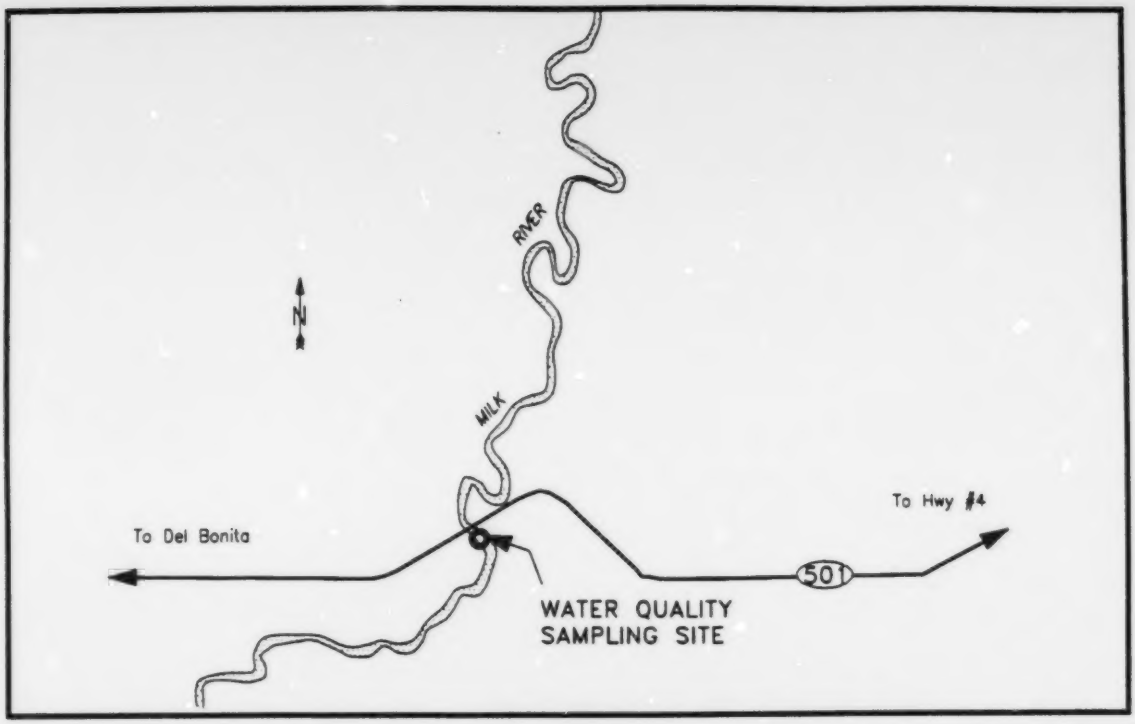
ISSUES:

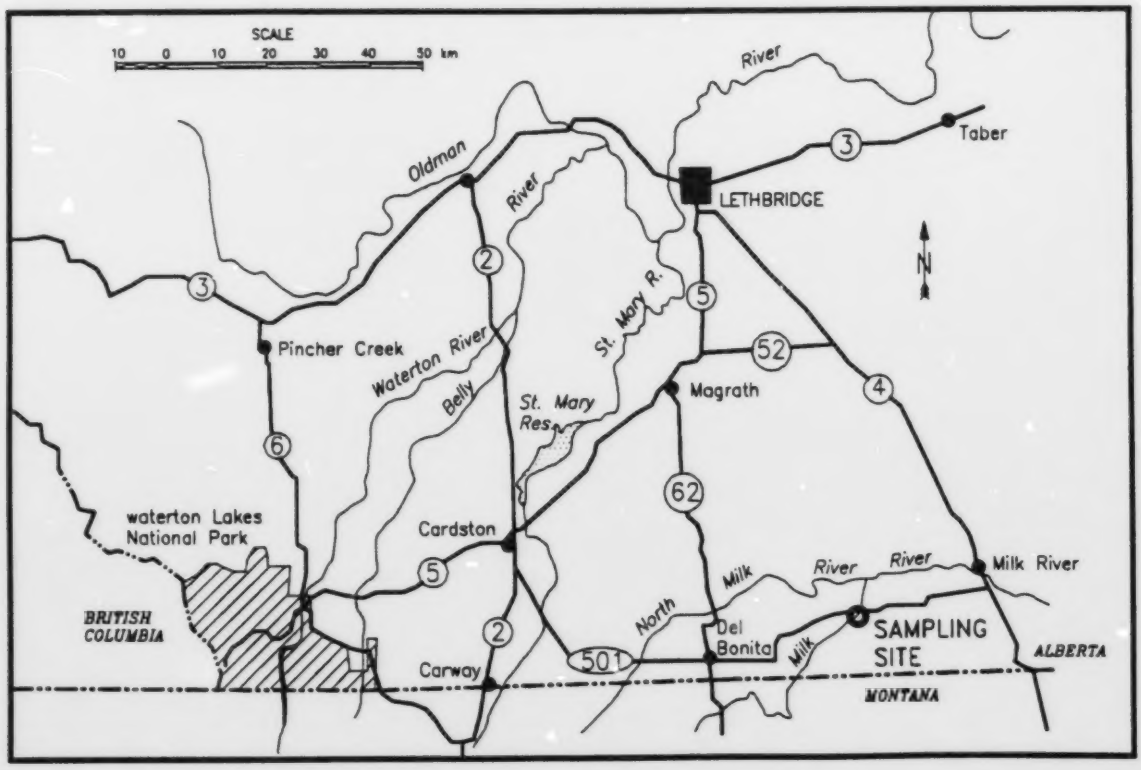
- Monitored for international water transfers.
- Development of irrigation dam upstream.

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: H. Block **DATE**: December, 1988

Milk River near Western Crossing of International Boundary





Milk River near Western Crossing of International Boundary

NAQUADAT NUMBER: 00AL11AA0002 **WSC REFERENCE NUMBER**: 11AA025

PROJECT REFERENCE NUMBER: 311 **SUBMITTER I.D.**: 0003

LOCATION: Latitude: 49° 05' 22" Longitude: 112° 24' 06"

Sampling location is at bridge on secondary road 501, approximately 27.5 km west of junction with Highway 4.

Sampled in summer by wading upstream of bridge. Ice conditions variable from dangerously thin, to greater than 1 metre throughout the same winter. May have little or no flow from July to November.

STATION ESTABLISHED: April 6, 1960

PERIOD OF RECORD: 1960 - 64, 1967 -

STATION TYPE: Interjurisdictional

EXPECTED FIELD OBSERVATIONS: (allow 2 months latitude either way)

	DO	*pH*	*Turbidity*	*Specific Cond.*	*Total Coliform*	*Fecal Coliform*
WINTER	*10.0 - 14.5*	*7.9 - 8.4*	*1.0 - 10.0*	*510 - 1200*	*2 - 100*	*< 2-50*
SPRING	*9.5 - 12.5*	*7.7 - 8.6*	*4.0 - 200*	*280 - 480*	*< 100*	*< 75*
SUMMER	*7.9 - 10.0*	*8.2 - 8.7*	*1.0 - 40*	*410 - 620*	*2 - 500*	*2 - 500*
FALL	*8.5 - 12.6*	*8.2 - 8.5*	*2.5 - 30*	*430 - 840*	*2 - 500*	*< 500*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1909 -

SEDIMENT DATA: 1974 - 76

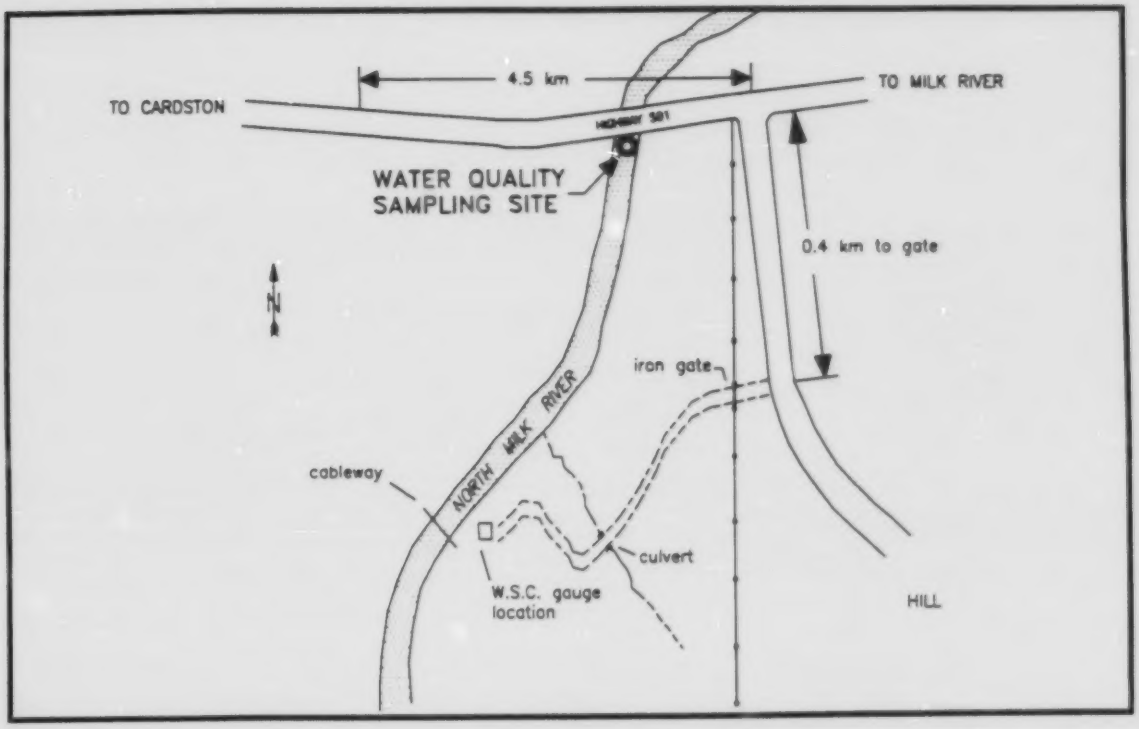
ISSUES:

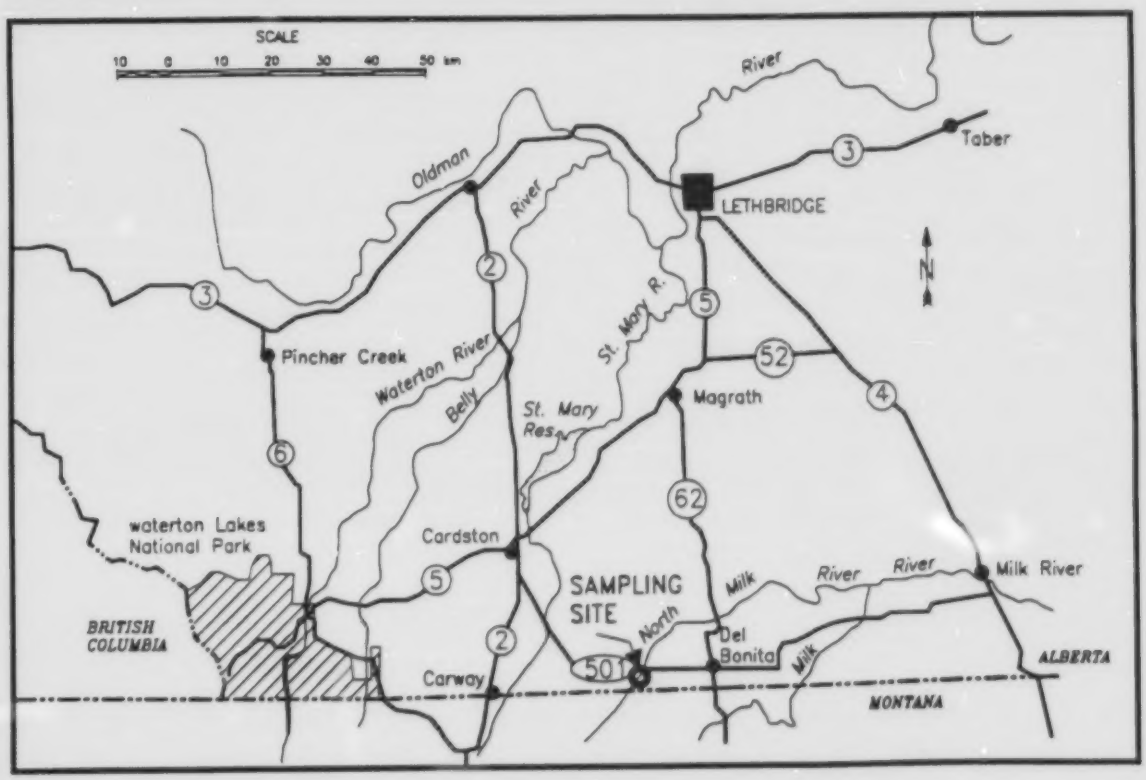
- Monitored for international water transfers.

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: H. Block **DATE**: December, 1988

North Milk River near the International Boundary





North Milk River near the International Boundary

NAQUADAT NUMBER: 00AL11AA0001 **WSC REFERENCE NUMBER**: 11AA001

PROJECT REFERENCE NUMBER: 311 **SUBMITTER I.D.**: 0003

LOCATION: Latitude: 49° 01' 18" Longitude: 112° 58' 18"

Sampling location is at bridge on secondary road 501, approximately 14.5 km west of Del Bonita, Alberta. Sampled by wading upstream of bridge or from bridge during high water. Rocks covered in algae and may be slippery. Main channel in winter is near right bank.

STATION ESTABLISHED: April 5, 1960

PERIOD OF RECORD: 1960 -

STATION TYPE: Interjurisdictional

EXPECTED FIELD OBSERVATIONS: (allow 1 month latitude either way)

	DO	*pH*	*Turbidity*	*Specific Cond.*	*Total Coliform*	*Fecal Coliform*
WINTER	*8.5 - 13.0*	*7.7 - 8.4*	*1.0 - 4.5*	*390 - 525*	*< 90*	*< 50*
SPRING	*8.9 - 13.0*	*7.7 - 8.4*	*4.0 - 80*	*140 - 400*	*< 500*	*< 100*
SUMMER	*8.0 - 10.5*	*7.7 - 8.4*	*1.0 - 25*	*125 - 380*	*10 - 500*	*4 - 500*
FALL	*9.5 - 14.5*	*8.1 - 8.7*	*0.5 - 5.0*	*270 - 510*	*< 2 - 100*	*< 85*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1909 -

SEDIMENT DATA: 1974 - 76

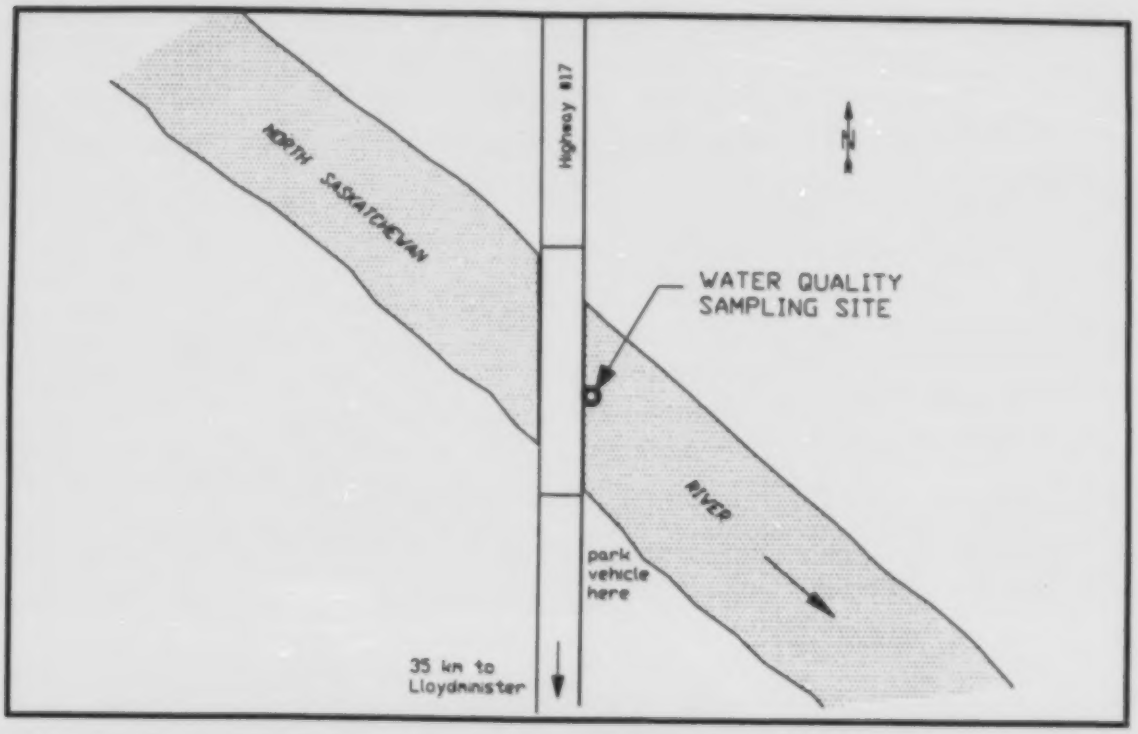
ISSUES:

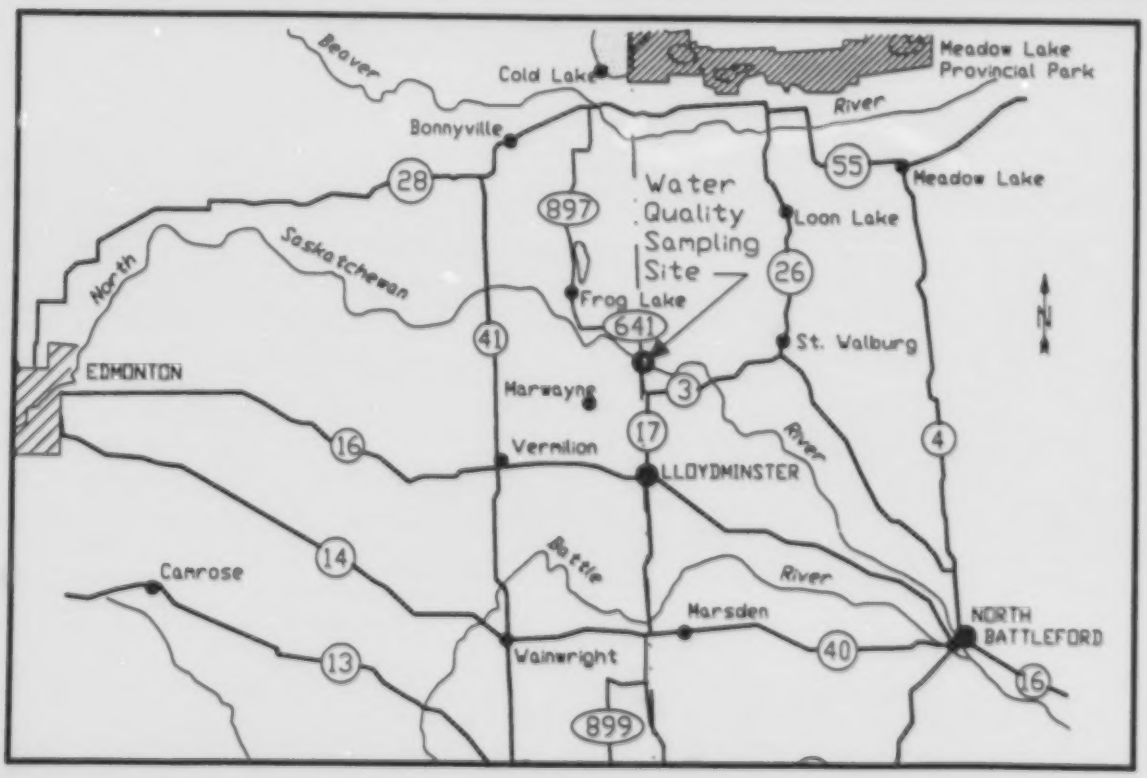
- Monitored for international water transfers.
- Water diversion from St. Mary river.

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: H. Block **DATE**: December, 1988

North Saskatchewan River at Highway 17





North Saskatchewan River at Highway 17

NAQUADAT NUMBER: 05AL05EF0003 **WSC REFERENCE NUMBER**: -------

PROJECT REFERENCE NUMBER: 315 **SUBMITTER I.D.**: 462

LOCATION: Latitude: 53° 36' 05" Longitude: 110° 00' 00"

Sample at bridge centre on east side. The bridge is roughly 25 meters above the river, hence a long sampling rope must be used.

STATION ESTABLISHED: Replaced location at Lea Park in April 1988.

PERIOD OF RECORD: April 88 - Ongoing

STATION TYPE: Network, heavy metal & herbicide, PPWB.

EXPECTED FIELD OBSERVATIONS:

	DO	pH	Turbidity	Specific Cond.	Total Coliform	Fecal Coliform
WINTER	8 - 10	7.5 - 7.9	< 5	380 - 450	< 2 - 100	< 2 - 150
SPRING	8 - 10	7.8 - 8.4	> 100	150 - 400	< 2 - 80	< 2 - 100
SUMMER	8 - 10	8.0 - 8.5	< 20	300 - 350	< 2 - 150	< 2 - 200
FALL	10 - 12	7.9 - 8.2	< 5	350 - 400	< 2 - 60	< 2 - 80

Algae growth expected during August, oil sheen frequently seen in May

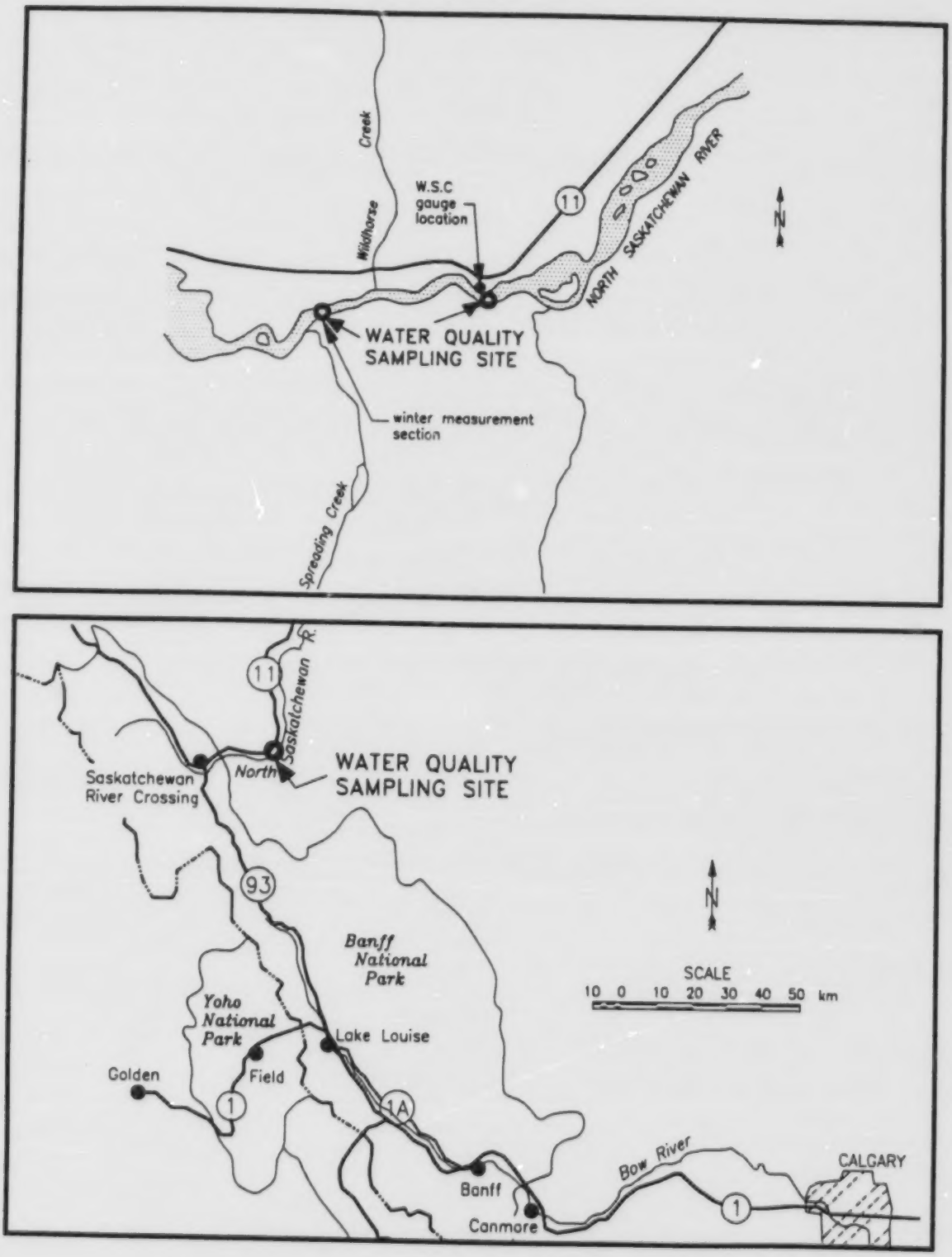
ISSUES:

- Major interprovincial river monitored for PPWB
- Downstream of major urban area (Edmonton)
- Pesticide manufacturing (Fort Saskatchewan)
- Fertilizer plants located at Fort Saskatchewan, Redwater
- Potential for trans-basin water transfer to service heavy oil industry
- Source for domestic water in Lloydminister, North Battleford, Prince Albert.

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: P. W. NEIL **DATE**: February, 1989

North Saskatchewan River at Whirlpool Point



North Saskatchewan River at Whirlpool Point

NAQUADAT NUMBER: 00AL05DA0001 **WSC REFERENCE NUMBER**: 05DA009

PROJECT REFERENCE NUMBER: 314 **SUBMITTER I.D.**: 0417

LOCATION: Latitude: 52° 00' 10" Longitude: 116° 28' 18"

Sampling location is approximately 19 km east of Saskatchewan Crossing along Highway 11 at viewpoint. Sampled from shore below WSC gauge. Winter sampling below whirlpool area, or if ice unsafe by wading at rapids above Wildhorse Creek.

STATION ESTABLISHED: October 28, 1970

PERIOD OF RECORD: 1970, 1972 - 73, 1978 -

STATION TYPE: Networks, eastern slopes, National Parks

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Specific Cond.*	*Total Coliform*	*Fecal Coliform*	*Fecal Strep*
WINTER	*8.0 - 13.8*	*7.6 - 8.4*	*0.2 - 6.5*	*255 - 310*	*< 5*	*< 5*	*< 15*
SPRING	*10.3 - 11.9*	*8.0 - 8.3*	*0.6 - 142*	*185 - 305*	*< 10*	*< 5*	*< 20*
SUMMER	*9.9 - 10.7*	*8.1 - 8.3*	*22 - 200*	*135 - 210*	*< 20*	*< 20*	*< 80*
FALL	*10.2 - 12.0*	*7.7 - 8.2*	*1.2 - 23*	*165 - 250*	*< 10*	*< 5*	*< 15*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1970 -

SEDIMENT DATA: 1972 -

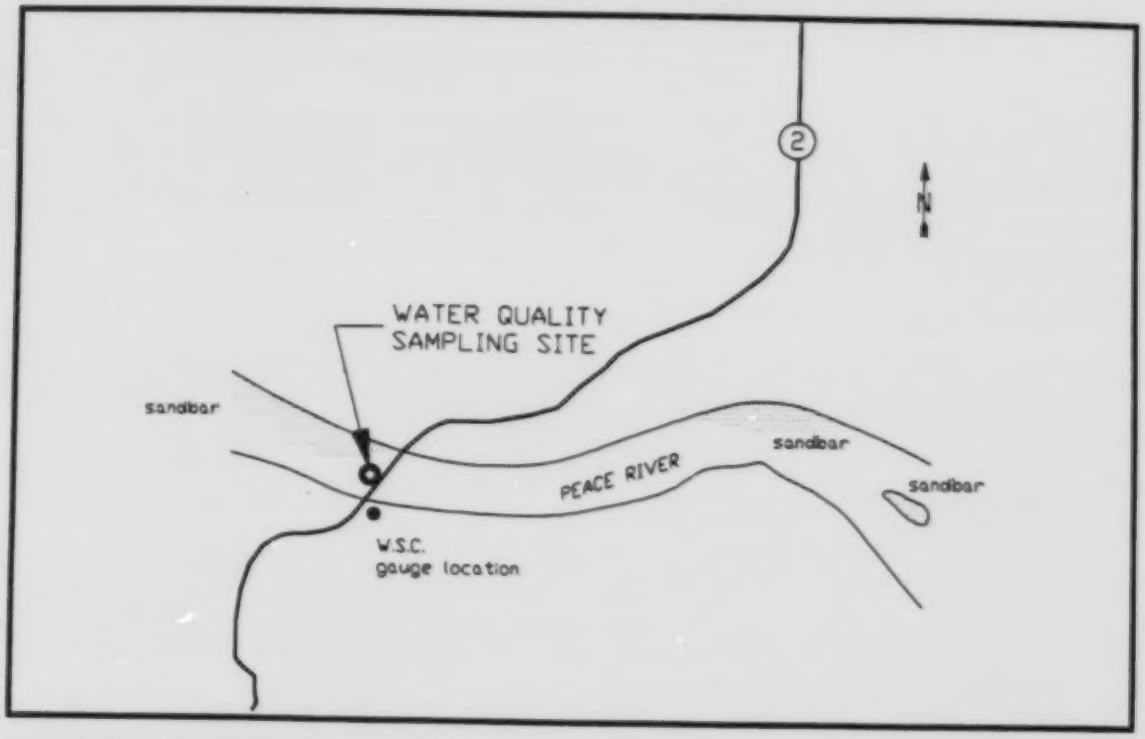
ISSUES:

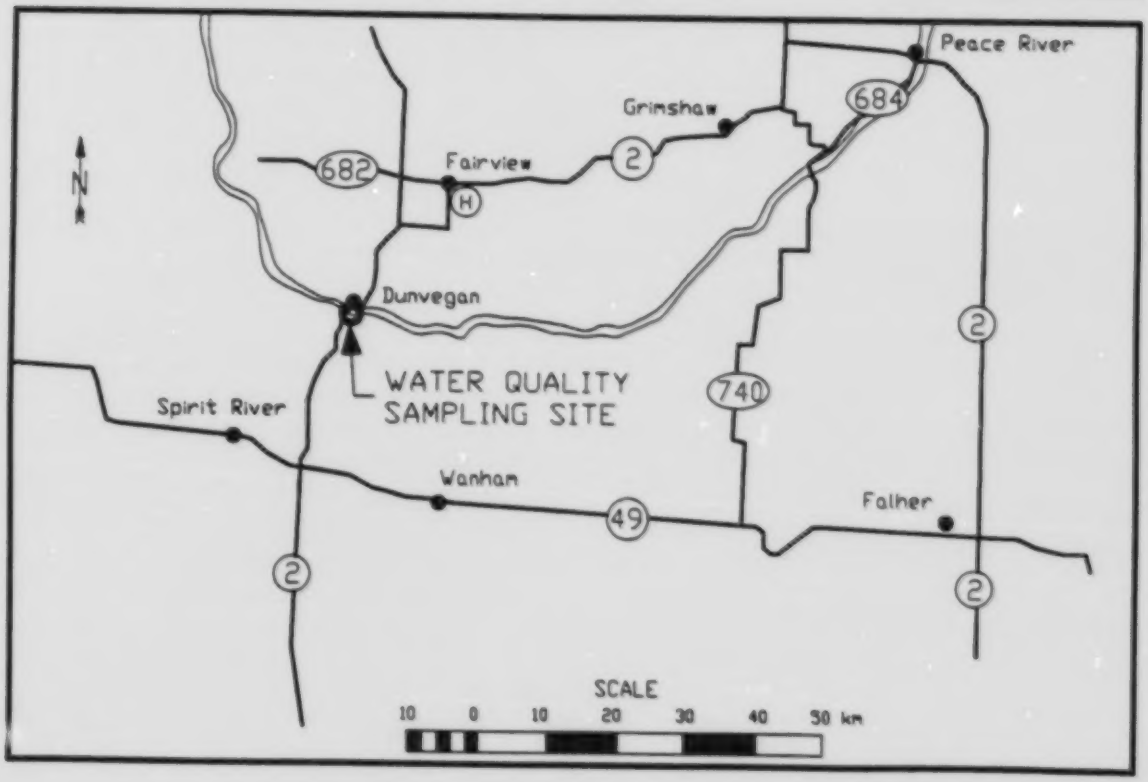
- National Parks Boundary Station
- Developments upstream - Saskatchewan Crossing Hotel and gas station, campground at Thompson Creek.
- Impact of tourist activities within the park.

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: H. Block **DATE**: December, 1988

Peace River at Highway 2 - Dunvegan, Alberta





Peace River at Highway 2 - Dunvegan, Alberta

NAQUADAT NUMBER: 00AL07FD0002 **WSC REFERENCE NUMBER**: 07FD003

PROJECT REFERENCE NUMBER: 311 **SUBMITTER I.D.**: 0001

LOCATION: Latitude: 55° 55' 18" Longitude: 118° 36' 32"

Sampling location is from Dunvegan suspension bridge on Highway 2, 26 km south of Fairview, Alberta. Sampled by WRB staff. As of November 1988, open water samples are collected using a boat rather than from the bridge because of the hazards associated with this bridge site.

STATION ESTABLISHED: August 19, 1969

PERIOD OF RECORD: 1969, 1971-74, 1977 -

STATION TYPE: Network, Alberta-Canada Agreement

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Spec. Cond.*	*Total Colifrom*	*Fecal Coliform*	*Fecal Strep*
WINTER	*12.0 - 14.7*	*7.7 - 8.2*	*1.0 - 90*	*160 - 380*	*1 - 200*	*< 15*	*< 100*
SPRING	*10.3 - 14.0*	*7.9 - 8.4*	*10 - 250*	*150 - 220*	*< 300*	*< 80*	*< 100*
SUMMER	*9.0 - 11.5*	*7.8 - 8.4*	*2.0 - 140*	*180 - 230*	*< 1 - 160*	*< 80*	*< 220*
FALL	*10.0 - 14.5*	*7.6 - 8.4*	*1.0 - 30*	*170 - 230*	*< 1 - 200*	*< 10*	*< 240*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1960-69, 1974-

SEDIMENT DATA: 1975 -

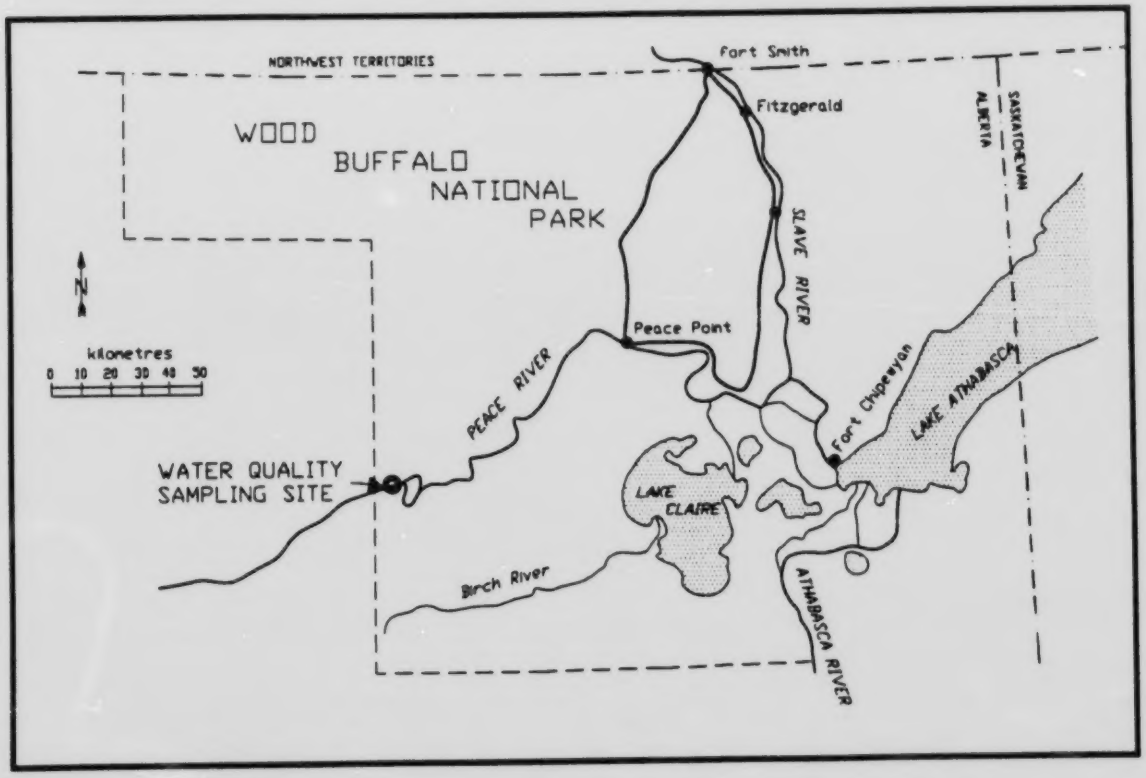
ISSUES:

- Hydroelectric Dams, water diversion proposals.

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: H. Block **DATE**: December, 1988

Peace River at Garden Creek



Peace River at Garden Creek

NAQUADAT NUMBER: 00AL07KA0001 **WSC REFERENCE NUMBER**: --------

PROJECT REFERENCE NUMBER: 325 **SUBMITTER I.D.**: 0417

LOCATION: Latitude: 58° 42' 18" Longitude: 113° 52' 47"

Sampled by Parks Canada Warden Service, Wood Buffalo National Park.

STATION ESTABLISHED: October, 1990

PERIOD OF RECORD: 1990 -

STATION TYPE: Peace-Athabasca Delta baseline

EXPECTED FIELD OBSERVATIONS: Awaiting sufficient accumulation of data; see Peace River at Peace Point for estimate.

WSC HYDROMETRIC STATION PERIOD OF RECORD: NONE

SEDIMENT DATA: NONE

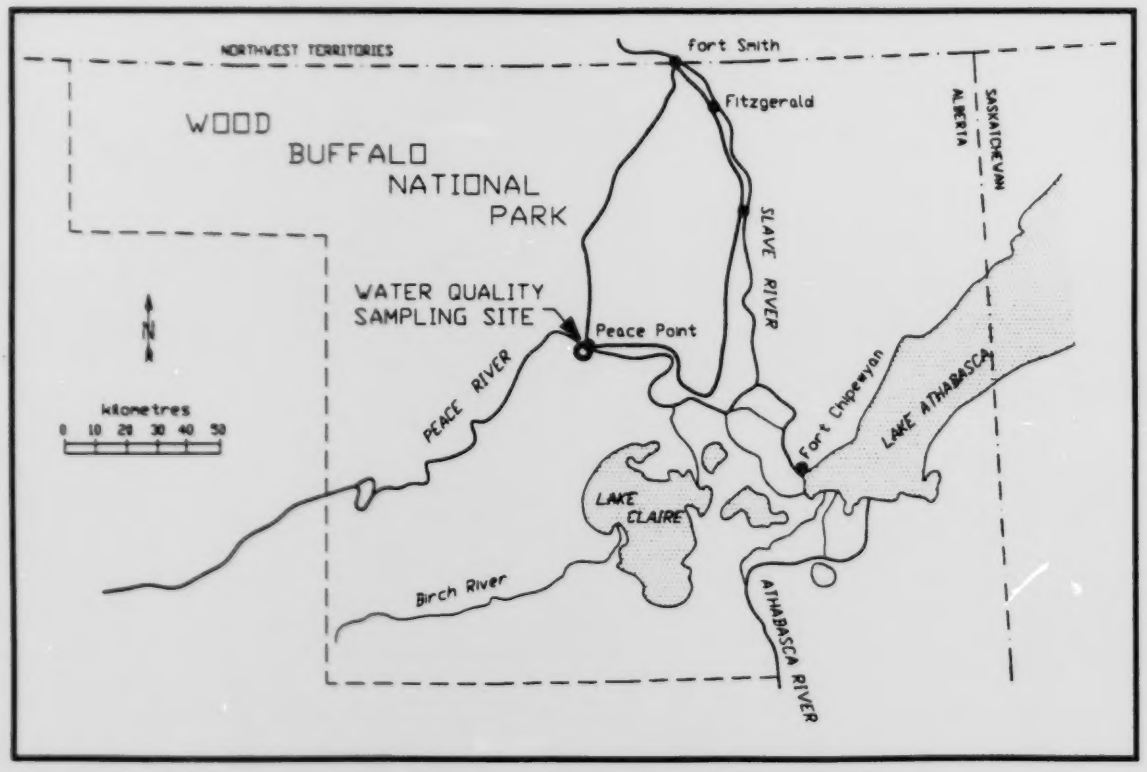
ISSUES:

- Upstream industrial development's effects on water quality in the park. Park boundary station.

REPORTS AVAILABLE FOR THIS SITE: NONE

PREPARED OR REVISED BY: L. Mottle **DATE**: December, 1990

Peace River at Peace Point



Peace River at Peace Point

NAQUADAT NUMBER: 00AL07KC0001 **WSC REFERENCE NUMBER**: 07KC001

PROJECT REFERENCE NUMBER: 325 **SUBMITTER I.D.**: 0417

LOCATION: Latitude: 59° 06' 50" Longitude: 112° 25' 35"

Sampled by Parks Canada Warden Service, Wood Buffalo National Park.

STATION ESTABLISHED: October, 1967

PERIOD OF RECORD: 1967 - 77, 1989 -

STATION TYPE: Network, Peace-Athabasca delta baseline

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Specific Cond.*	*Total Coliform*	*Fecal Coliform*
WINTER	*n/a*	*7.4 - 7.9*	*n/a*	*190 - 400*	*n/a*	*n/a*
SPRING	*n/a*	*7.6 - 7.9*	*n/a*	*200 - 500*	*n/a*	*n/a*
SUMMER	*n/a*	*7.6 - 8.1*	*n/a*	*175 - 250*	*n/a*	*n/a*
FALL	*n/a*	*7.8 - 8.2*	*n/a*	*200 - 250*	*n/a*	*n/a*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1959 -

SEDIMENT DATA: 1967 -

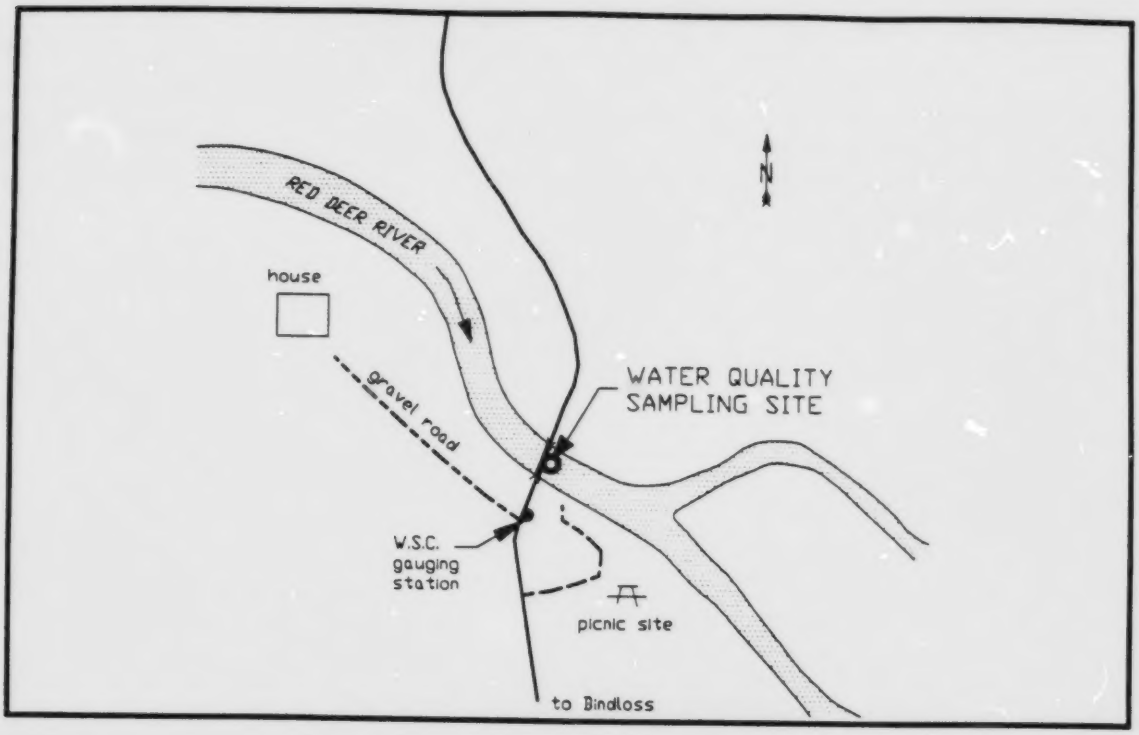
ISSUES:

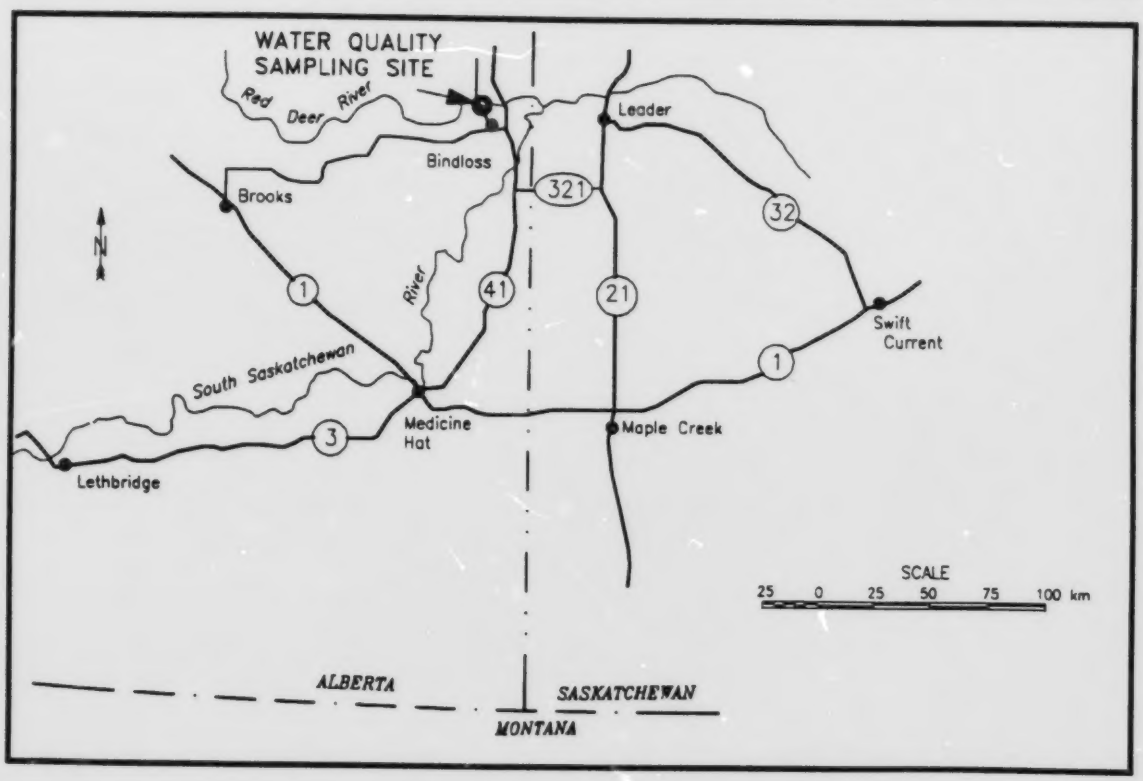
- Upstream industrial development effects on water quality in the park.

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: L. Mottle **DATE**: December, 1990

Red Deer River at Bindloss





Red Deer River at Bindloss

NAQUADAT NUMBER: 00AL05CK0001 **WSC REFERENCE NUMBER**: 05CK004

PROJECT REFERENCE NUMBER: 315 **SUBMITTER I.D.**: 462

LOCATION: Latitude: 50° 54' 10" Longitude: 110° 17' 48"

Sampling location is at bridge on secondary road, northwest of the community of Bindloss, approximately 3 km north of the railway line. Sampled from center stream, downstream of bridge (from water survey platform) during open water. During ice-cover periods, samples taken approx. 40 metres downstream of bridge at channel centre.

STATION ESTABLISHED:

PERIOD OF RECORD:

STATION TYPE: Network, heavy metal & herbicide, PPWB.

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Specific Conductance*
WINTER	*< 4.0*	*7.8*	*< 10*	*800*
SPRING	*10.0*	*8.2*	*100*	*450*
SUMMER	*8.0*	*8.2*	*< 200*	*375*
FALL	*12.0*	*8.1*	*20*	*600*

Algae growth expected during August

Oil sheen frequently seen in May

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1960 -

SEDIMENT DATA: 1966 -

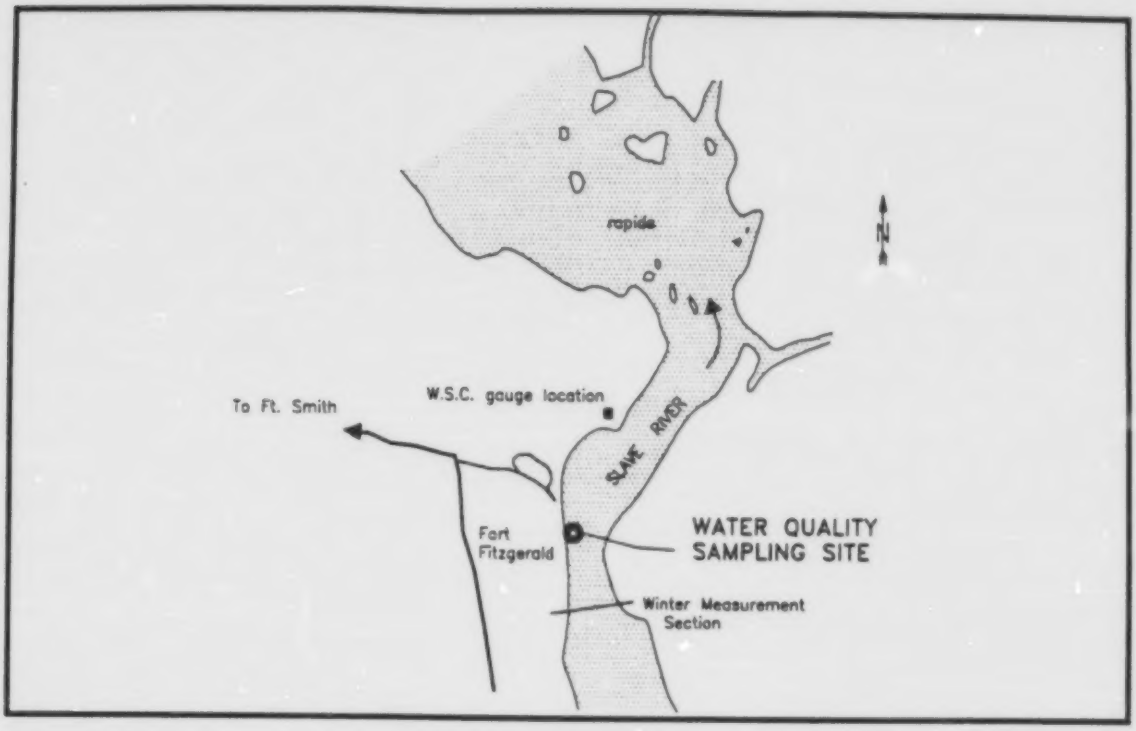
ISSUES:

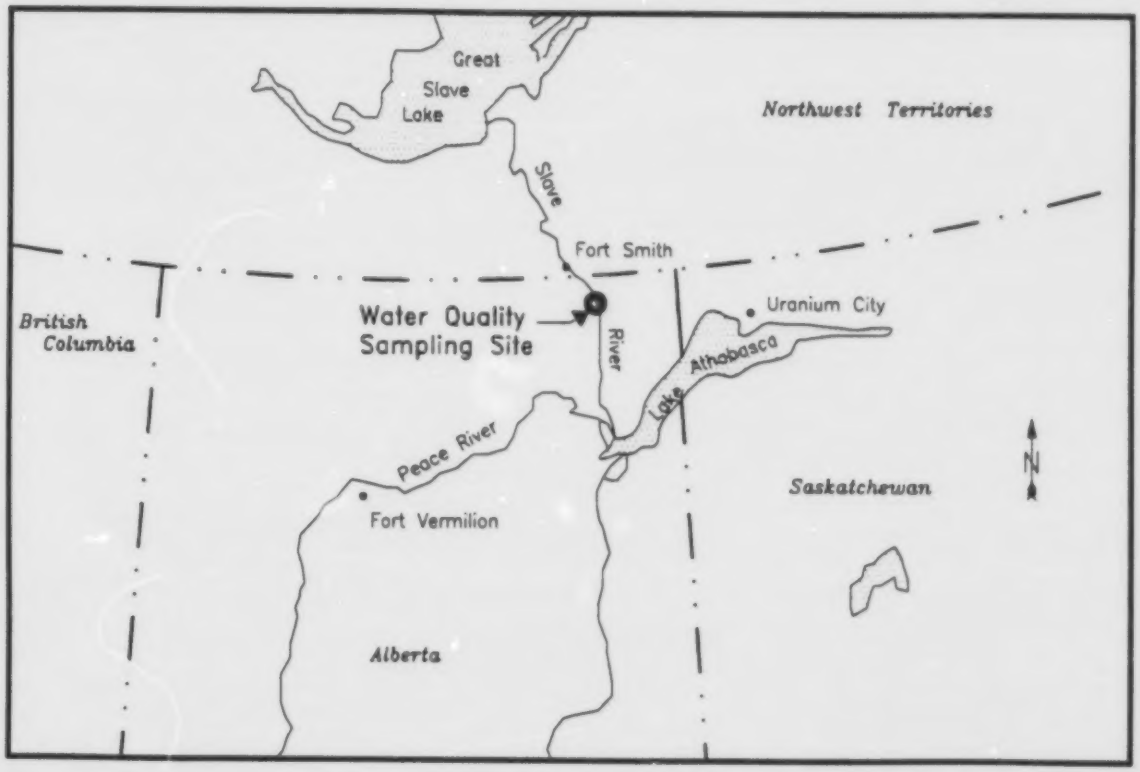
- Major interprovincial river monitored for PPWB.

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: P.W. NEIL **DATE**: April 3, 1987

Slave River at Fitzgerald





Slave River at Fitzgerald

NAQUADAT NUMBER: 00AL07NB0001 **WSC REFERENCE NUMBER**: 07NBOO1

PROJECT REFERENCE NUMBER: 392 **SUBMITTER I.D.**: 0001

LOCATION: Latitude: 59° 52' 20" Longitude: 111° 35' 00"

Surface grab sample collected from upstream side of government dock. Water is generally fast moving, resulting in turbid water.

STATION ESTABLISHED: 1960

PERIOD OF RECORD: 60 -

STATION TYPE: Baseline, water quality objectives, interjurisdictional. Data base for main contaminants poorly developed. Future monitoring is pursuant to bilateral negotiations (Aberta, NWT) through the Mackenzie River Basin Agreement.

EXPECTED FIELD OBSERVATIONS:

	pH
WINTER	*7.5*
SPRING	—
SUMMER	*8.2*
FALL	—

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1921 - 22, 1930 - 31, 1953 -

SEDIMENT DATA: 1971 -

ISSUES:

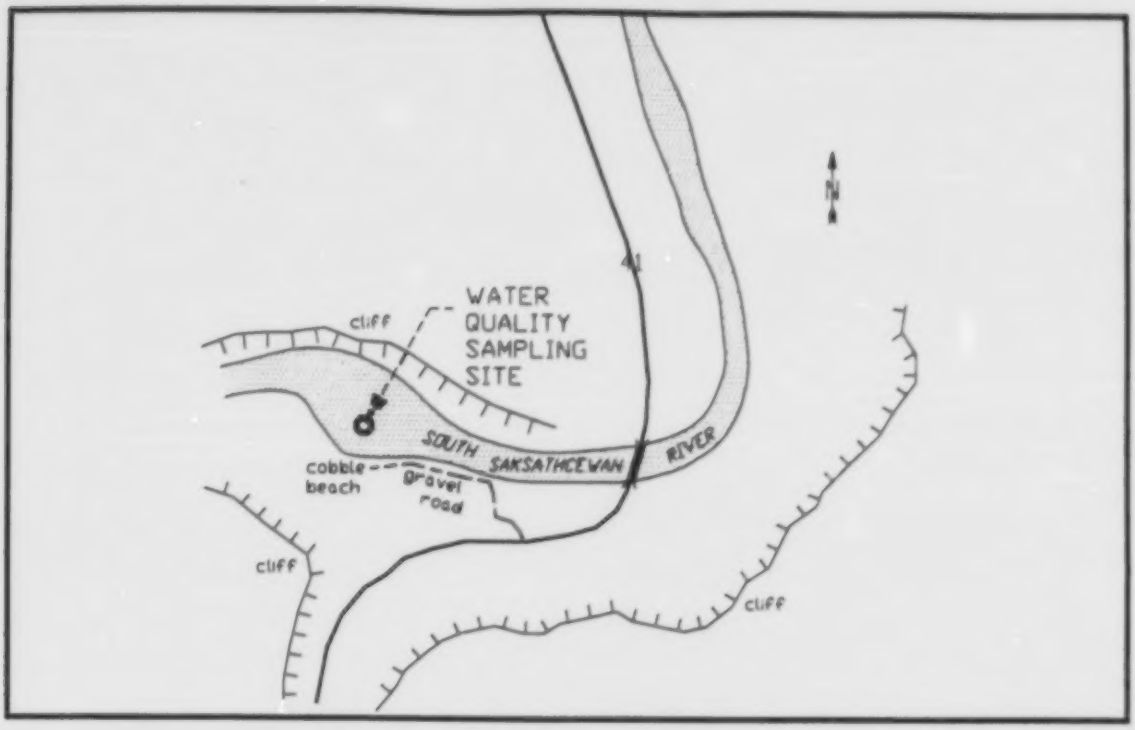
- Athabasca Tar Sands effluent discharge.
- Pesticides from Peace River agriculture.
- Proposed pulp and paper mill on Peace River.

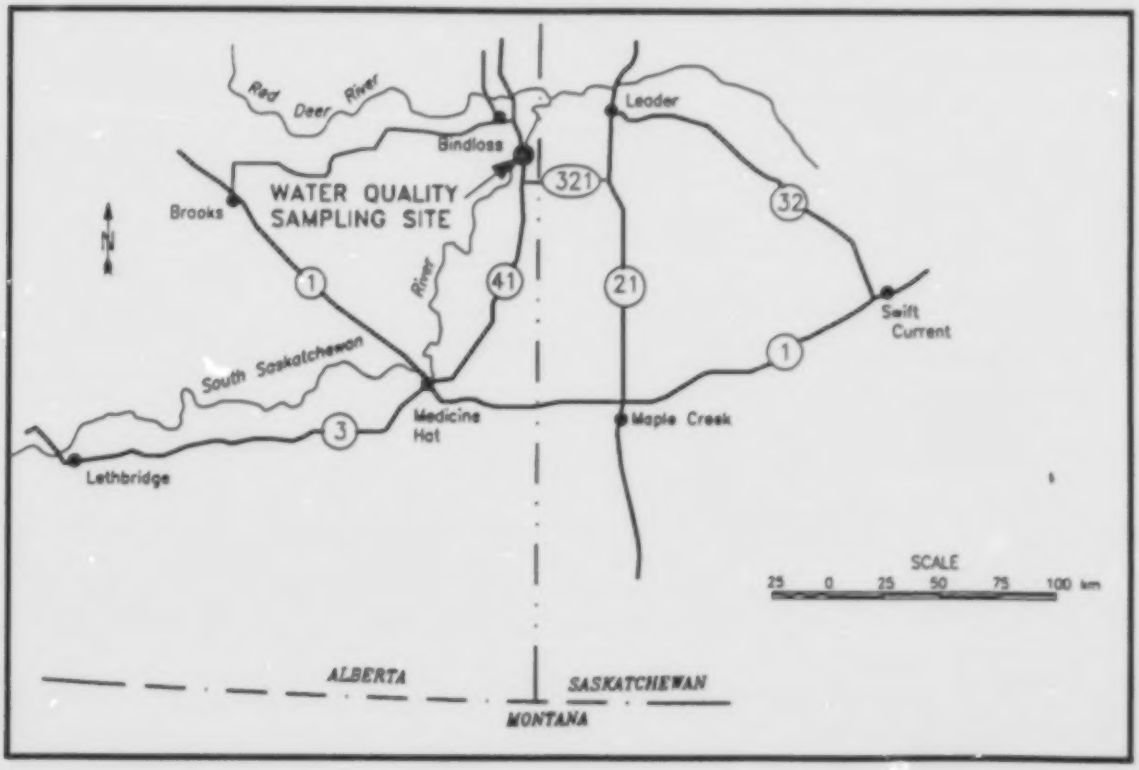
REPORTS AVAILABLE FOR THIS SITE:

- Water Quality Data Report on the Slave River. Indian and Northern Affairs. 1985
- Slave River Hydroelectric Project. Preliminary Identification of Environmental Issues. Department of Renewable Resources GNWT. 1982.

PREPARED OR REVISED BY: B. Olding **DATE**: December, 1988

South Saskatchewan River at Highway 41





South Saskatchewan River at Highway 41

NAQUADAT NUMBER: 00AL05AK0001 **WSC REFERENCE NUMBER**: 05AK001

PROJECT REFERENCE NUMBER: 315 **SUBMITTER I.D.**: 0462

LOCATION: Latitude: 50° 44' 15" Longitude: 110° 05' 44"

Sampling upstream from bridge on secondary road used for campers and picnickers. Sampled 20 meters from south shore near cobble beach. Sampling carried out at this site during ice-covered and open water periods. During ice break-up and high flow, sampling from bridge is advised.

STATION ESTABLISHED: January 28, 1970

PERIOD OF RECORD: January 1970 - Ongoing

STATION TYPE: Network, heavy metal & herbicide, PPWB.

EXPECTED FIELD OBSERVATIONS:

	DO	pH	Turbidity	Specific Cond.	Total Coliform	Fecal Coliform
WINTER	12.0	7.8	< 10	500	< 2 - 30	< 2 - 100
SPRING	12.0	8.1	30	400	< 2 - 30	< 2 - 100
SUMMER	9.0	8.3	100	300	< 2 - 30	< 2 - 100
FALL	14.0	8.1	< 20	400	< 2 - 30	< 2 - 100

Algae growth expected during August
Oil sheen frequently seen in May

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1966 -

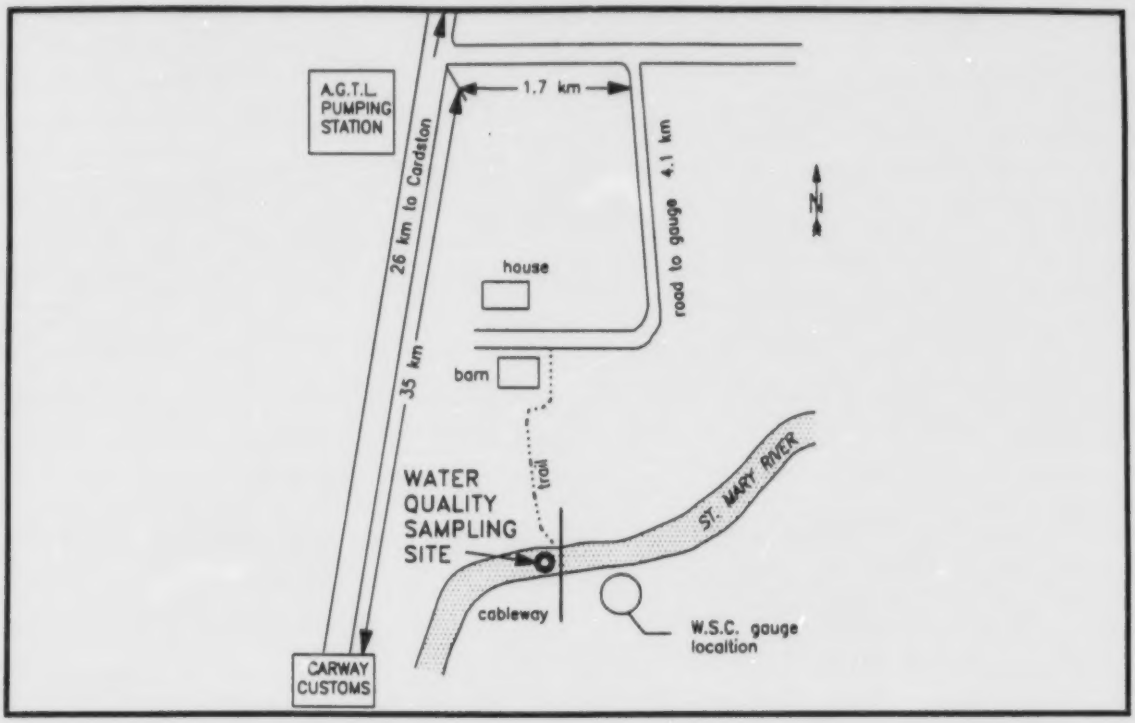
SEDIMENT DATA: 1966 -

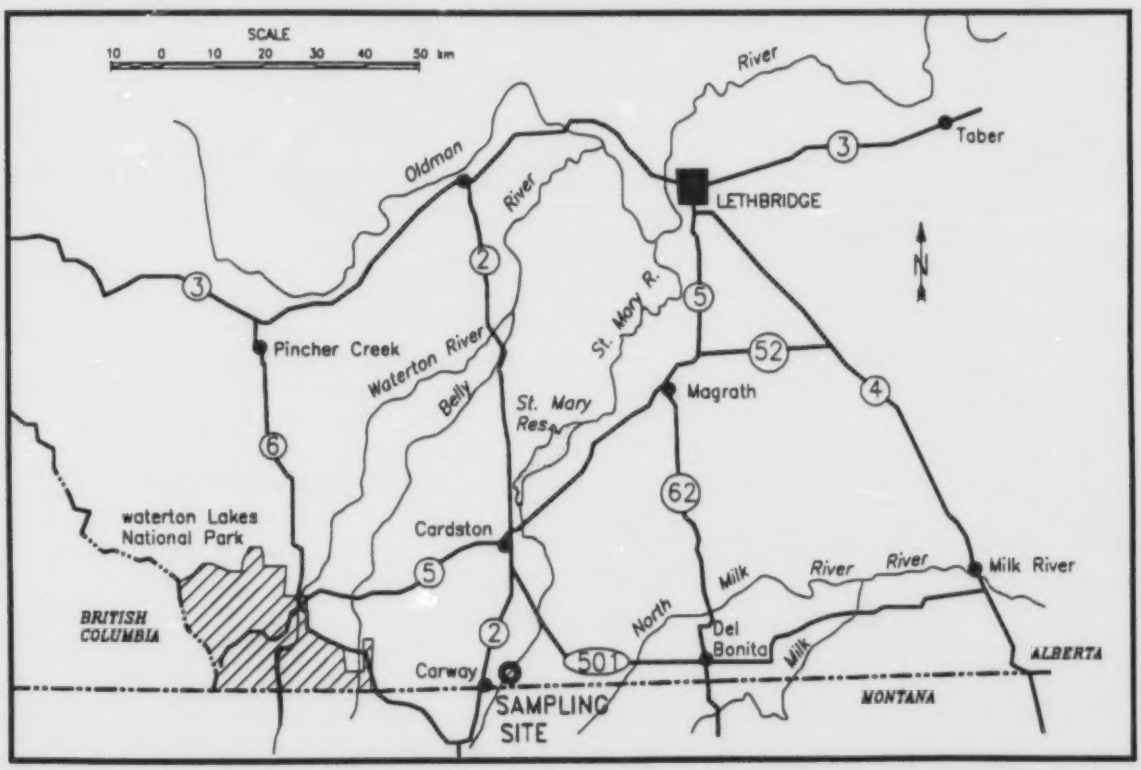
ISSUES:

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: P.W. NEIL **DATE**: January 29, 1989

St. Mary River near International Boundary (Formerly near Kimball)





St. Mary River Near International Boundary (Formerly near Kimball)

NAQUADAT NUMBER: 00AL05AE0001 **WSC REFERENCE NUMBER**: 05AE027

PROJECT REFERENCE NUMBER: 311 **SUBMITTER I.D.**: 0003

LOCATION: Latitude: 49° 00' 10" **Longitude**: 113° 18' 50"

Sampling location is at Cook's Ranch, approximately 27 km south of Cardston on Highway 2, then east at "Granite Ranch" sign, 1 km to ranch road marked by gateway with wagon wheels at base. South on this road to just east of stables to WSC cableway. Sampled by wading near cableway. Rocks slippery.

STATION ESTABLISHED: September 1, 1960

PERIOD OF RECORD: 1960 -

STATION TYPE: Interjurisdictional

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Specific Cond.*	*Total Coliforms*	*Fecal Coliforms*
WINTER	*10.5 - 14*	*7.7 - 8.5*	*0.5 - 4*	*160 - 275*	*< 70*	*< 70*
SPRING	*9.5 - 13*	*7.6 - 8.5*	*0.5 - 110*	*150 - 275*	*< 170*	*< 140*
SUMMER	*7.8 - 10*	*7.5 - 8.2*	*0.5 - 25*	*140 - 220*	*< 120*	*< 120*
FALL	*9.0 - 13.5*	*7.5 - 8.4*	*0.2 - 5*	*150 - 290*	*< 60*	*< 50*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1902 -

SEDIMENT DATA: 1977-78

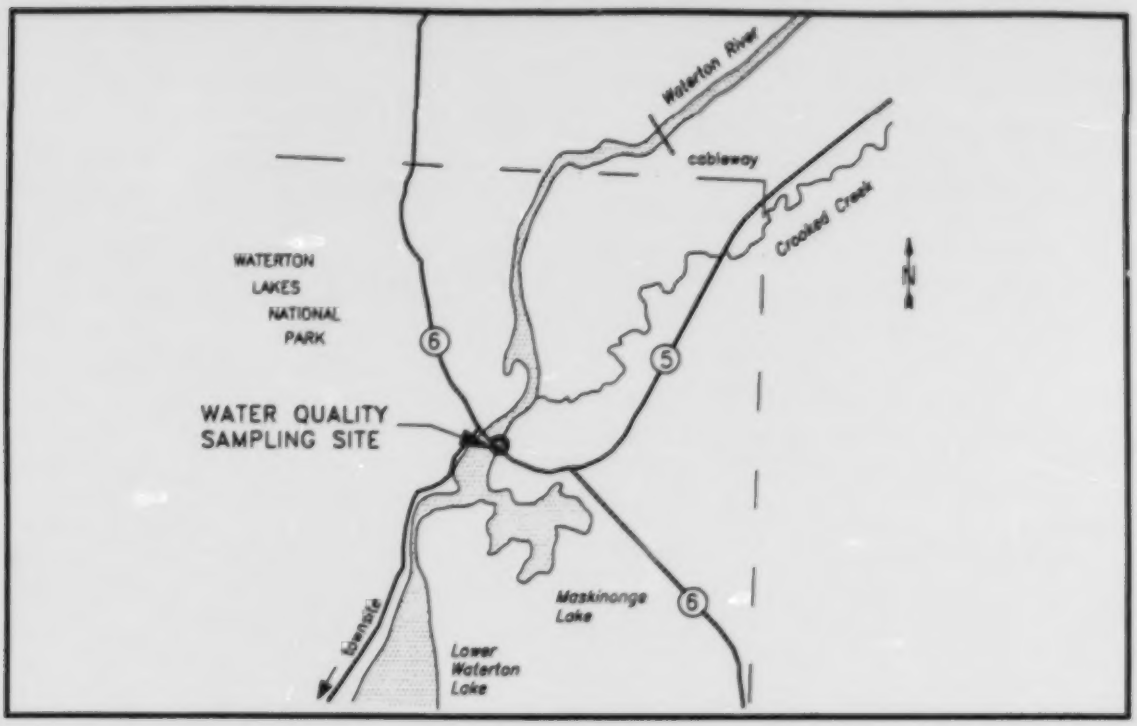
ISSUES:

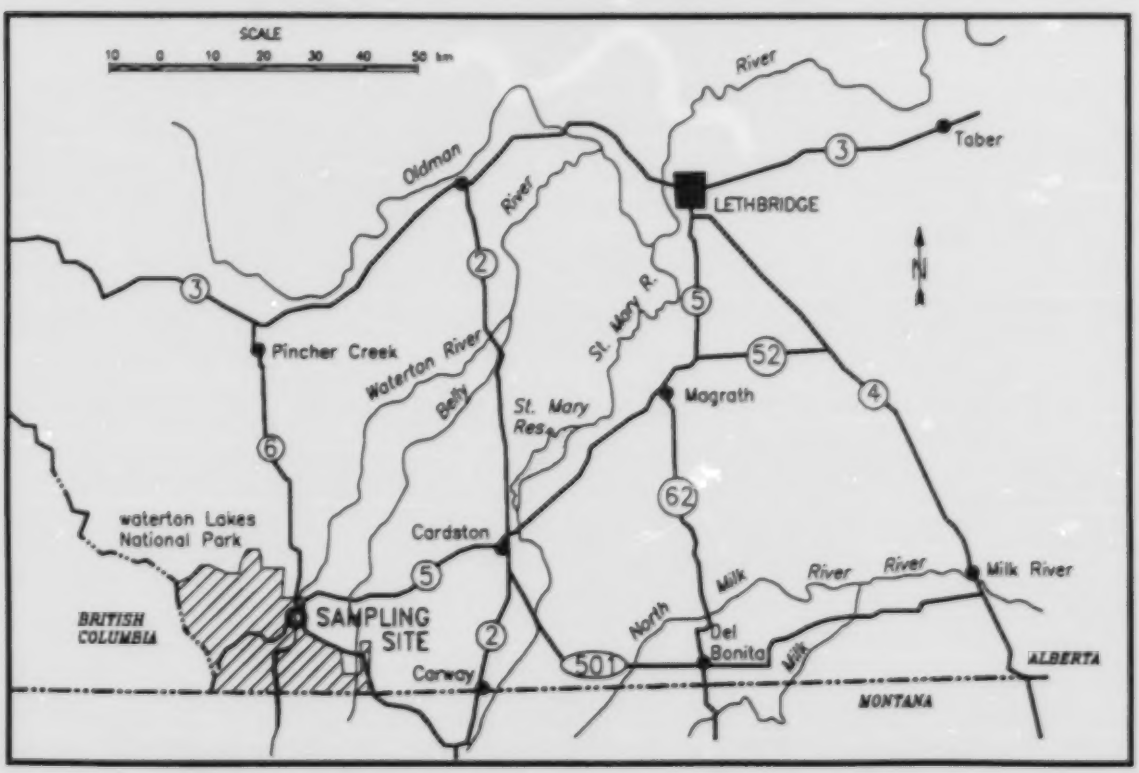
- Monitored for international water transfer.

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: H. Block **DATE**: December, 1988

Waterton River at Highway 6 Bridge near Waterton Lakes National Park





Waterton River at Highway 6 Bridge near Waterton Lakes National Park

NAQUADAT NUMBER: 00AL05AD0005 **WSC REFERENCE NUMBER**: 05AD003

PROJECT REFERENCE NUMBER: 311 **SUBMITTER I.D.**: 0003

LOCATION: Latitude: 49° 06' 50" Longitude: 113° 50' 20"

Sampling location is at Highway 6 Bridge just east of Waterton Lakes National Park gate. Sampled from bridge near mid-stream or by wading from right bank. Abundant algae on bottom rocks in summer. Slippery bottom. Usually open water conditions year round. Extremely windy location, it is sometimes helpful to park on bridge in winter using vehicle as a windbreak.

STATION ESTABLISHED: August 26, 1964

PERIOD OF RECORD: 1964 -

STATION TYPE: Eastern slopes, network, National Parks, Interjurisdictional.

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Specific Cond.*	*Total Coliform*	*Fecal Coliform*
WINTER	*10.8 - 13.0*	*7.5 - 8.4*	*0.4 - 4.0*	*145 - 240*	*< 5*	*< 5*
SPRING	*10.4 - 13.0*	*7.7 - 8.2*	*1.0 - 6.0*	*140 - 180*	*< 10*	*< 5*
SUMMER	*8.0 - 10.5*	*7.5 - 8.3*	*0.5 - 10.0*	*140 - 180*	*< 50*	*< 50*
FALL	*9.0 - 12.5*	*7.4 - 8.4*	*0.3 - 5.0*	*150 - 260*	*< 20*	*< 20*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1908 - 33, 1948 -

SEDIMENT DATA: Not available

ISSUES:

- Monitored for international water.
- National Parks boundary station.

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: H. Block **DATE**: December, 1988

SASKATCHEWAN

WATER QUALITY MONITORING

Environment Canada
Water Quality Branch
Saskatchewan District Office
Room 300, Park Plaza
2365 Albert Street
Regina, Saskatchewan
S4P 4K1
(306) 780-6025

N.W.T.
LEGEND
5 WQB SAMPLING SITE
Uranium City
Fond du Lac
Fond du Lac R.
Slave R.
Lake Athabasca
Athabasca R.
Wollaston Lake
Reindeer Lake
Geikie R.
RIVER
CHURCHILL
La Ronge
Flin Flon
Cumberland House
Beaver River
North Saskatchewan River
SASKATCHEWAN
Carrot R.
27
The Pas
Prince Albert
Battle R.
North Battleford
28
Red Deer R
29
Biggar
Assiniboine River
MANITOBA
ALBERTA
Wynyard
Kamsack
31
South Saskatchewan River
96
Qu'Appelle River
30
Moose Jaw
Regina
Frenchman River
Estevan
90
52
54
Milk River
53
Poplar R.
7
MONTANA
NORTH DAKOTA
Souris River

SASKATCHEWAN WATER QUALITY MONITORING

PROJECT 312 — Canada-Saskatchewan Water Quality Monitoring Agreement

7. East Poplar River at International Boundary
52. Battle Creek near International Boundary
53. Frenchman River at 49th Parallel
54. Lodge Creek near Willow Creek at Highway 21
90. Souris River 16km South of Glen Ewen

Monthly sampling for these international sites is carried out for a wide variety of parameters. Unusual values may be followed up with re-surveys. Governments concerned are notified of potential and real problems.

PROJECT 315 — Prairie Provinces Water Board Monitoring (Alberta-Saskatchewan and Manitoba-Saskatchewan boundary)

25. Churchill River below Wasawakasik Lake
27. Carrot River at Turnberry
28. Battle River near Unwin
29. Red Deer River near Erwood
30. Qu'Appelle River 3.2km South of Welby
31. Assiniboine River at Highway #8 below Kamsack
32. Saskatchewan River above Carrot River

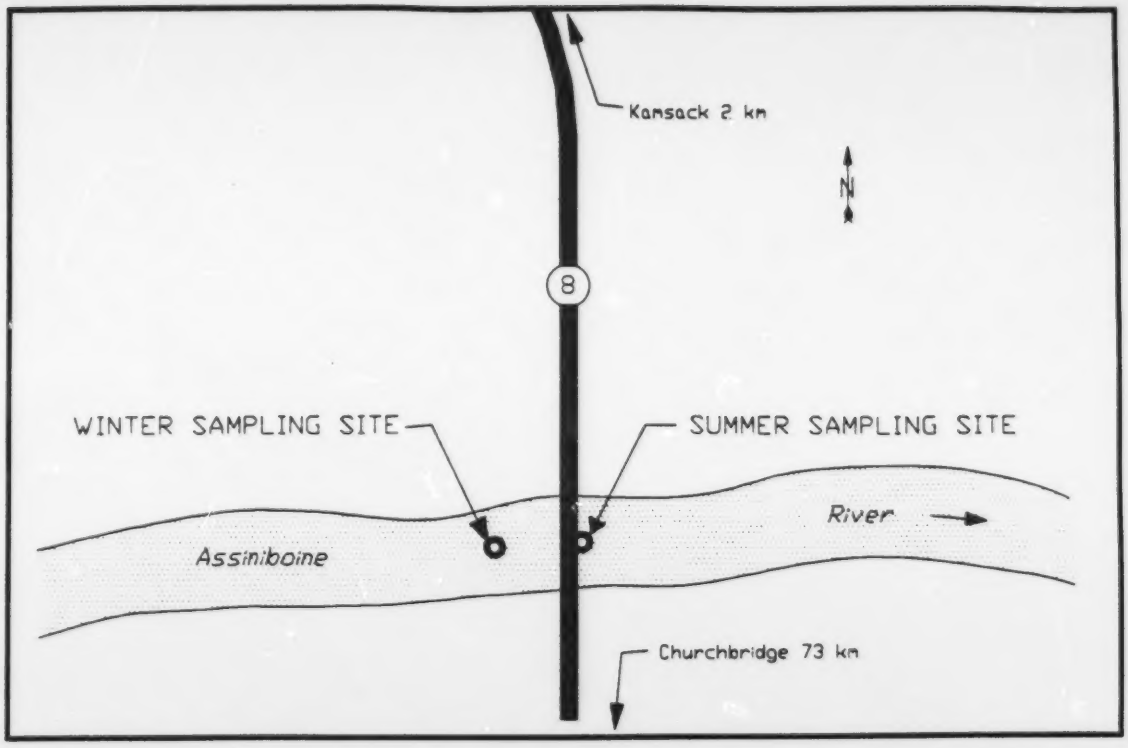
Four other PPWB sites along the Alberta-Saskatchewan border are described in the Alberta section of this book, and one PPWB site along the Saskatchewan-Manitoba border is described in the Manitoba section. For these interprovincial rivers the Water Quality Branch provides data, interpretation, and advice to the Prairie Provinces Water Board (PPWB). Stations are sampled monthly or seasonaly. These stations represent river systems in both the Canadian Shield and Plains physiographic regions of the Western and Northern Region.

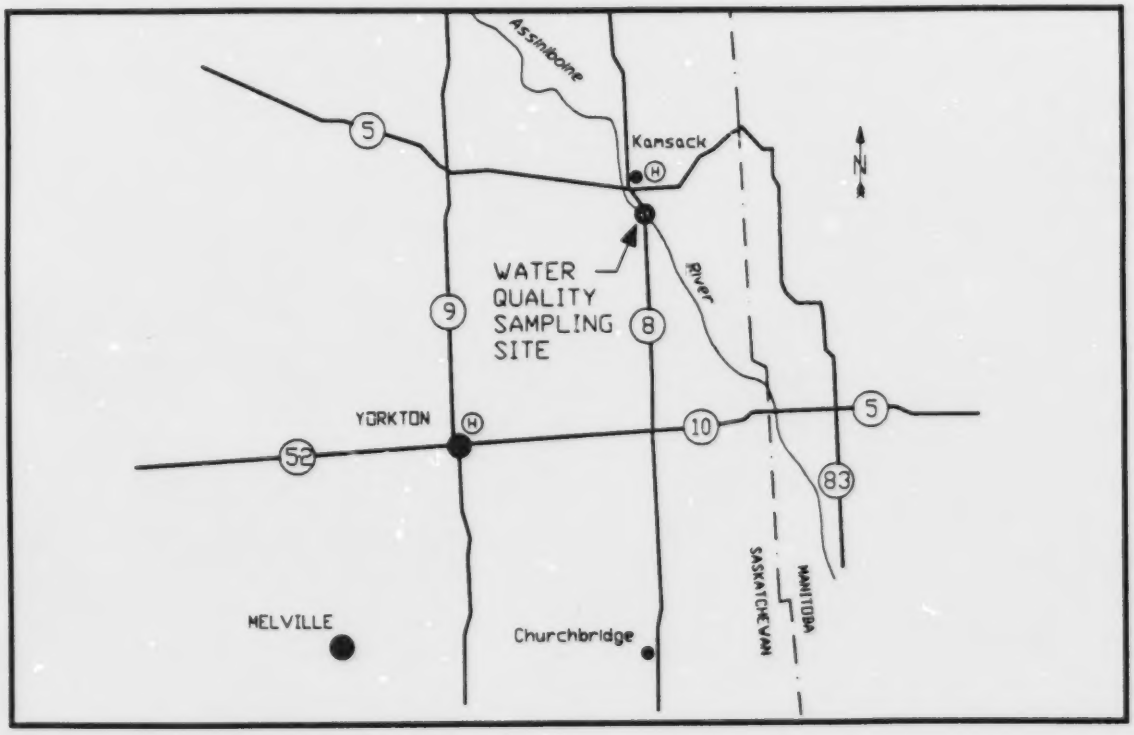
PROJECT 351 - Intensive Nutrient Monitoring of Lake Diefenbaker

96. South Saskatchewan River at Lemsford Ferry

Nutrient samples are conducted above and below Lake Diefenbaker. Samples are collected by lay-samplers on a weekly basis. Sample data are used to estimate nutrient loadings for Lake Diefenbaker and to update trophic status.

Assiniboine River below Kamsack





Assiniboine River below Kamsack

NAQUADAT NUMBER: 00SA05MD0002 WSC REFERENCE NUMBER: 05MD002

PROJECT REFERENCE NUMBER: 315 SUBMITTER I.D.: 0462

LOCATION: Latitude: 51° 31' 59" Longitude: 101° 53' 20"

Sampling location is at bridge on Highway 8, approximately 2 km south of Kamsack, Saskatchewan.

During open water, samples are collected on downstream side of bridge. During winter, samples are collected approximately 20 m upstream (in deep area).

STATION ESTABLISHED: January, 1957

PERIOD OF RECORD: 1957

STATION TYPE: Monthly, major ions, nutrients, heavy metal biocides.

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Spec. Cond.*	*Total Coliform*	*Fecal Coliform*
WINTER	*3 - 10*	*6.6 - 7.8*	*5 - 10*	*300 - 1600*	*< 0 - 500*	*< 0 - 100*
SPRING	*3 - 14*	*6.5 - 8.5*	*5 - 30*	*300 - 1200*	*< 0 - 700*	*< 0 - 150*
SUMMER	*5 - 14*	*6.5 - 8.5*	*5 - 130*	*300 - 1600*	*< 0 - 500*	*< 0 - 100*
FALL	*3 - 14*	*6.5 - 8.5*	*5 - 25*	*500 - 1600*	*< 0 - 500*	*< 0 - 100*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1944 open water, 1957 -

SEDIMENT DATA: 1969 - 77, 1978 - 79

ISSUES:

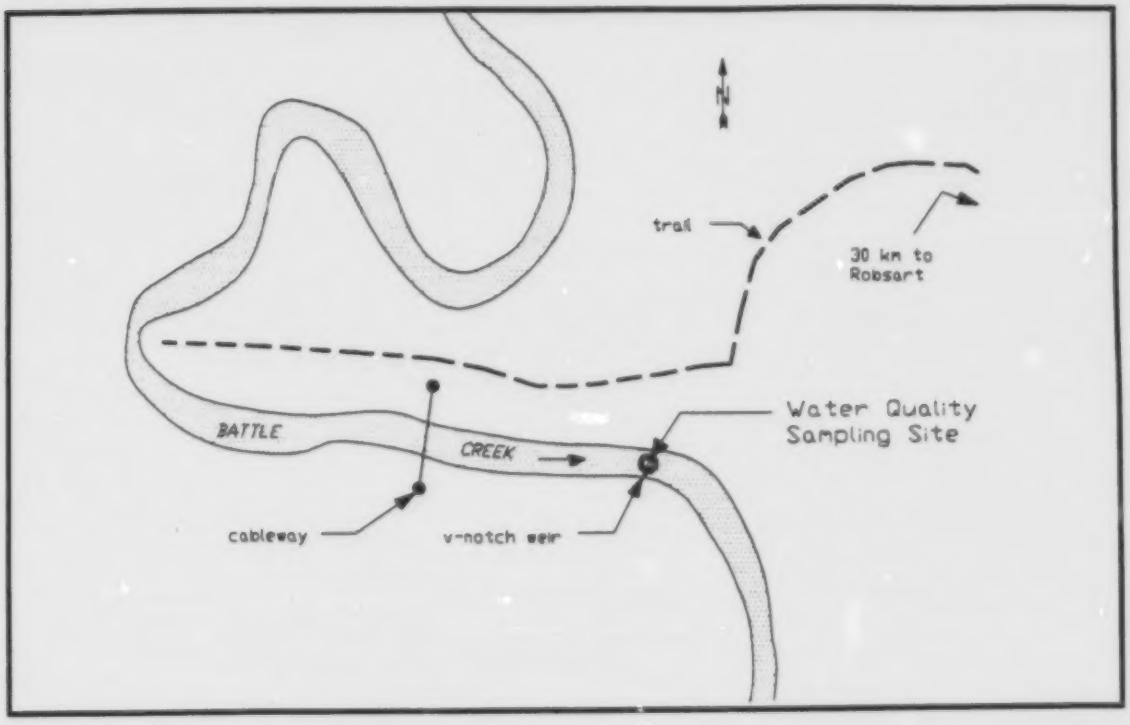
- Agriculture and municipal issues relating to river.
- Eutrophication and nutrient loading.

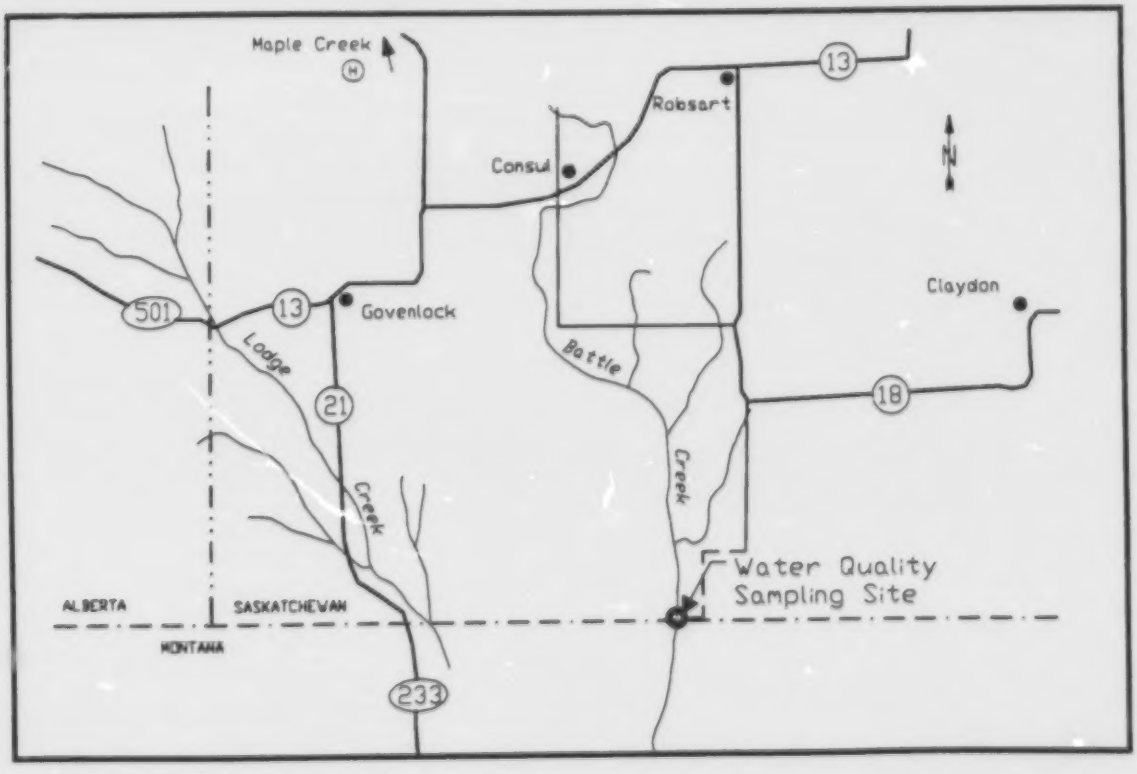
REPORTS AVAILABLE FOR THIS SITE:

- PPWB Report #50

PREPARED OR REVISED BY: Val Chacko DATE: February 13, 1989

Battle Creek near International Boundary





Battle Creek near International Boundary

NAQUADAT NUMBER: 00SA11AB0005 WSC REFERENCE NUMBER: 11AB027

PROJECT REFERENCE NUMBER: 312 SUBMITTER I.D.: 0001

LOCATION: Latitude: 49° 00' 24" Longitude: 109° 43' 30"

Sampling location at the V-notch weir at the international boundary. Zero discharge usually occurs during mid-summer months. Access to the site can be difficult during wet soil conditions. The use of 4-wheel drive vehicles is recommended.

STATION ESTABLISHED: June 5, 1979

PERIOD OF RECORD: June 5, 1979 - ONGOING

STATION TYPE: Network, field physicals, nutrients, bacteria, major ions, metals & herbicide. Bacteria samples are shipped to Regina for analysis.

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*
WINTER		
SPRING		
SUMMER	*8 - 12*	*8 - 9.6*
FALL		

Samples are collected by WSC field technicians monthly between March 1 to October 31.

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1951 -

SEDIMENT DATA: Not Available.

ISSUES:

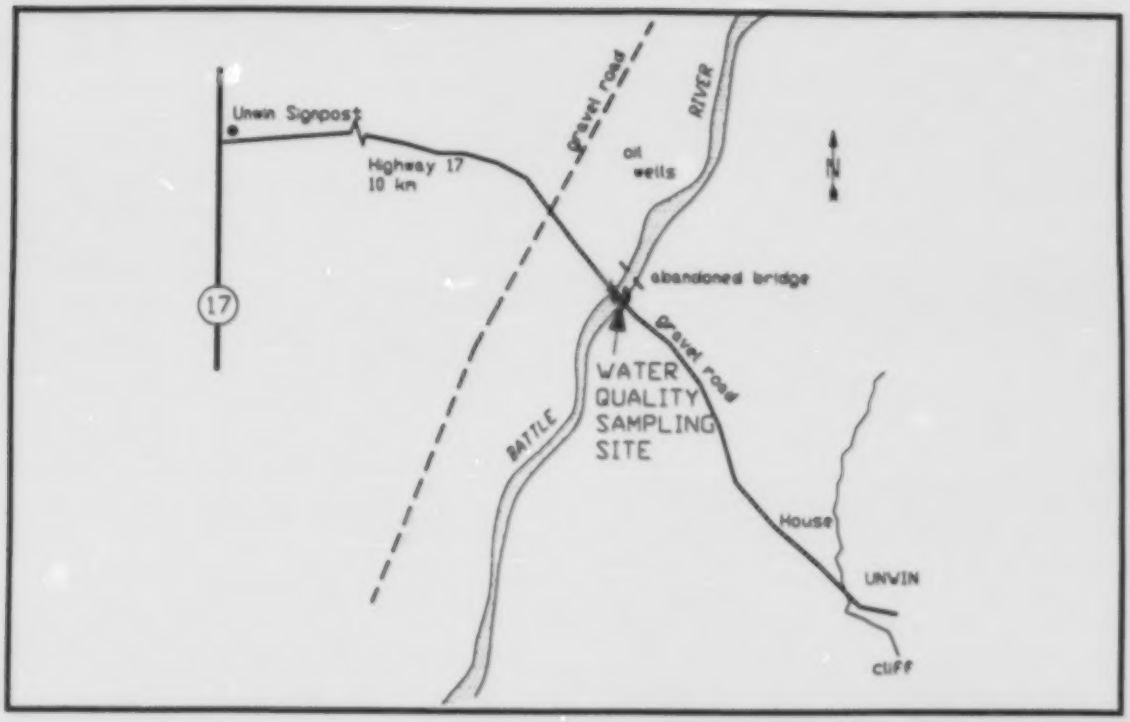
- The purpose of this station is to monitor water quality crossing the international boundary to meet commitments under the Boundary Waters treaty. Discharge at the station is regulated by upstream irrigation releases.

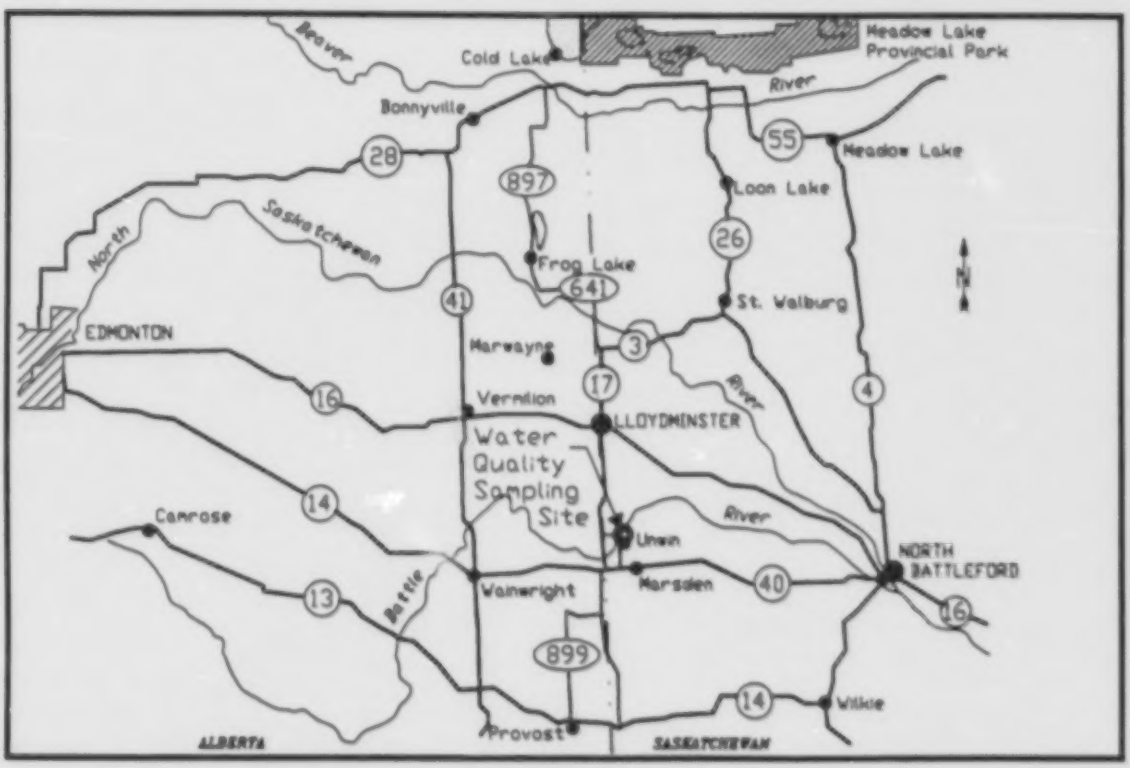
REPORTS AVAILABLE FOR THIS SITE:

- Some reports are available (all related to discharge)

PREPARED OR REVISED BY: P.W.Neil DATE: February 23, 1988

Battle River near Unwin





Battle River near Unwin

NAQUADAT NUMBER: 00SA05FE0001 WSC REFERENCE NUMBER: 05FE001

PROJECT REFERENCE NUMBER: 315 SUBMITTER I.D.: 462

LOCATION: Latitude: 52° 56' 25" Longitude: 109° 52' 23"

Sampling location is at bridge on secondary road connecting Highway 17 to the town of Unwin. Sampled at centre stream from north side of bridge during both ice covered and open water periods. Caution: bridge is a busy traffic area. Flying rocks could cause injury.

STATION ESTABLISHED: September, 1966

PERIOD OF RECORD: September, 1966 - ONGOING

STATION TYPE: Network, heavy metal & herbicide, PPWB.

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Spec. Cond.*	*Total Coliform*	*Fecal Coliform*
WINTER	*1.0*	*7.5*	*1.0*	*1200*	*< 2 - 50*	*< 2 - 60*
SPRING	*8.0*	*8.0*	*65.0*	*500*	*< 2 - 50*	*< 2 - 60*
SUMMER	*9.0*	*8.5*	*50.0*	*700*	*< 2 - 50*	*< 2 - 60*
FALL	*13.0*	*7.8*	*5.0*	*1000*	*< 2 - 50*	*< 2 - 60*

During high turbidity periods, total coliform filtrations tend to clog causing "no-values".
Algae growth expected during August. Oil sheen frequently seen in May.

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1944 -

SEDIMENT DATA: Not available

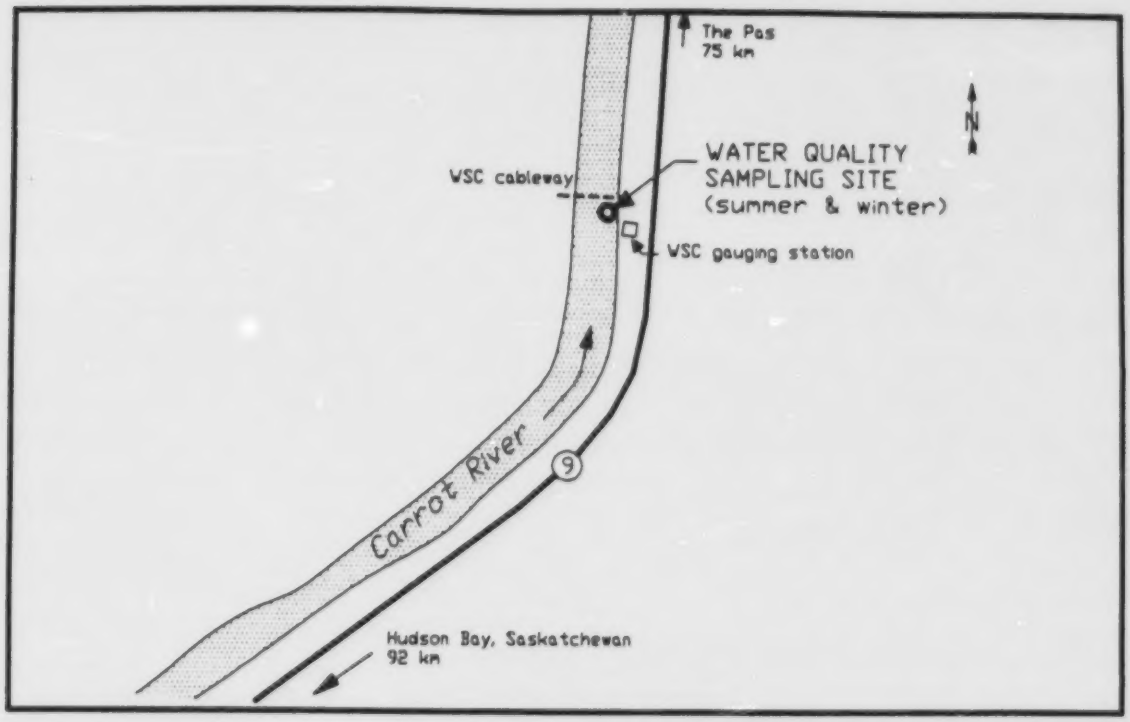
ISSUES:

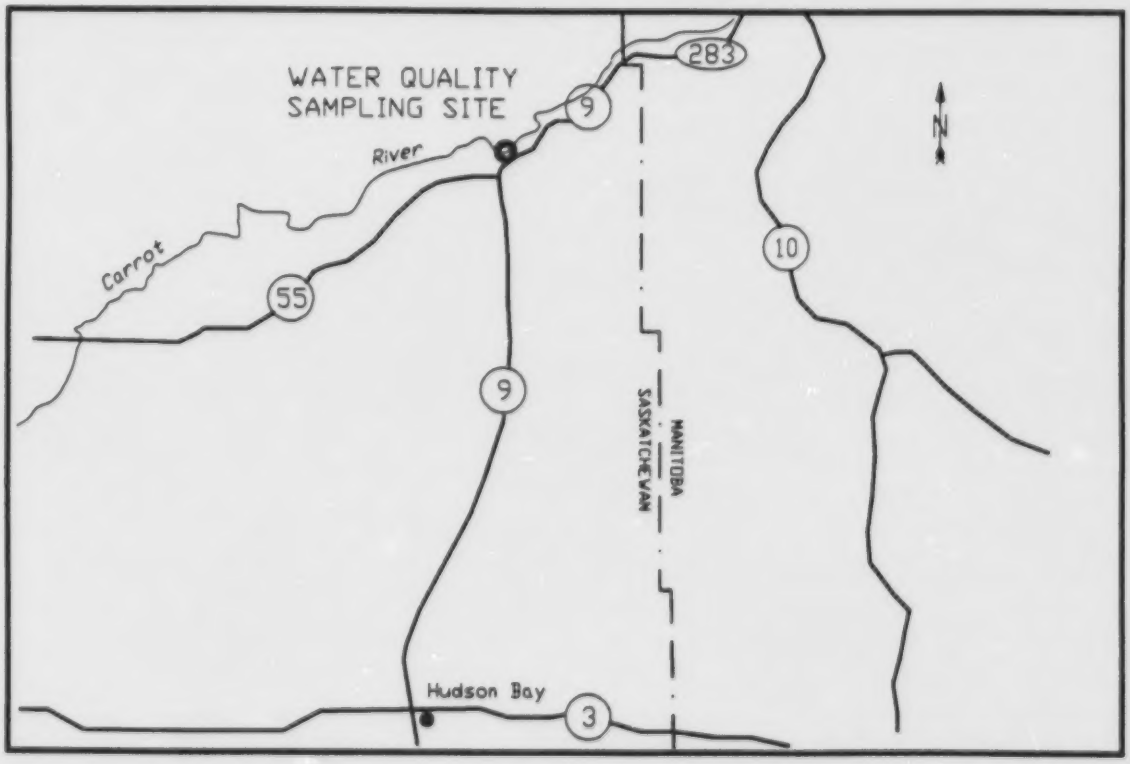
- Major interprovincial river monitored for PPWB

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: P.W. Neil DATE: February, 1989

Carrot River near Turnberry





Carrot River near Turnberry

NAQUADAT NUMBER: 00SA05KH0002 WSC REFERENCE NUMBER: 05KH002

PROJECT REFERENCE NUMBER: 315 SUBMITTER I.D.: 0462

LOCATION: Latitude: 53° 36' 00" Longitude: 102° 07' 00"

Sampling location is west of WSC stations (winter and summer). Samples are collected by wading, casting from bank, or from cable car.

STATION ESTABLISHED: May, 1974

PERIOD OF RECORD: 1974 -

STATION TYPE: Monthly, major ions, nutrients, heavy metal,biocides and bacteria.

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Spec. Cond.*	*Total Coliform*	*Fecal Coliform*
WINTER	*0 - 5*	*6.5 - 7.5*	*3 - 35*	*600 - 4000*	*< 0 - 150*	*< 0 - 50*
SPRING	*3 - 10*	*7.0 - 9.0*	*5 - 60*	*300 - 1000*	*< 0 - 300*	*< 0 - 70*
SUMMER	*6 - 14*	*7.0 - 8.5*	*5 - 250*	*500 - 1600*	*< 0 - 150*	*< 0 - 50*
FALL	*6 - 14*	*7.0 - 8.5*	*5 - 60*	*500 - 1600*	*< 0 - 150*	*< 0 - 50*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1966 -

SEDIMENT DATA: Not available

ISSUES:

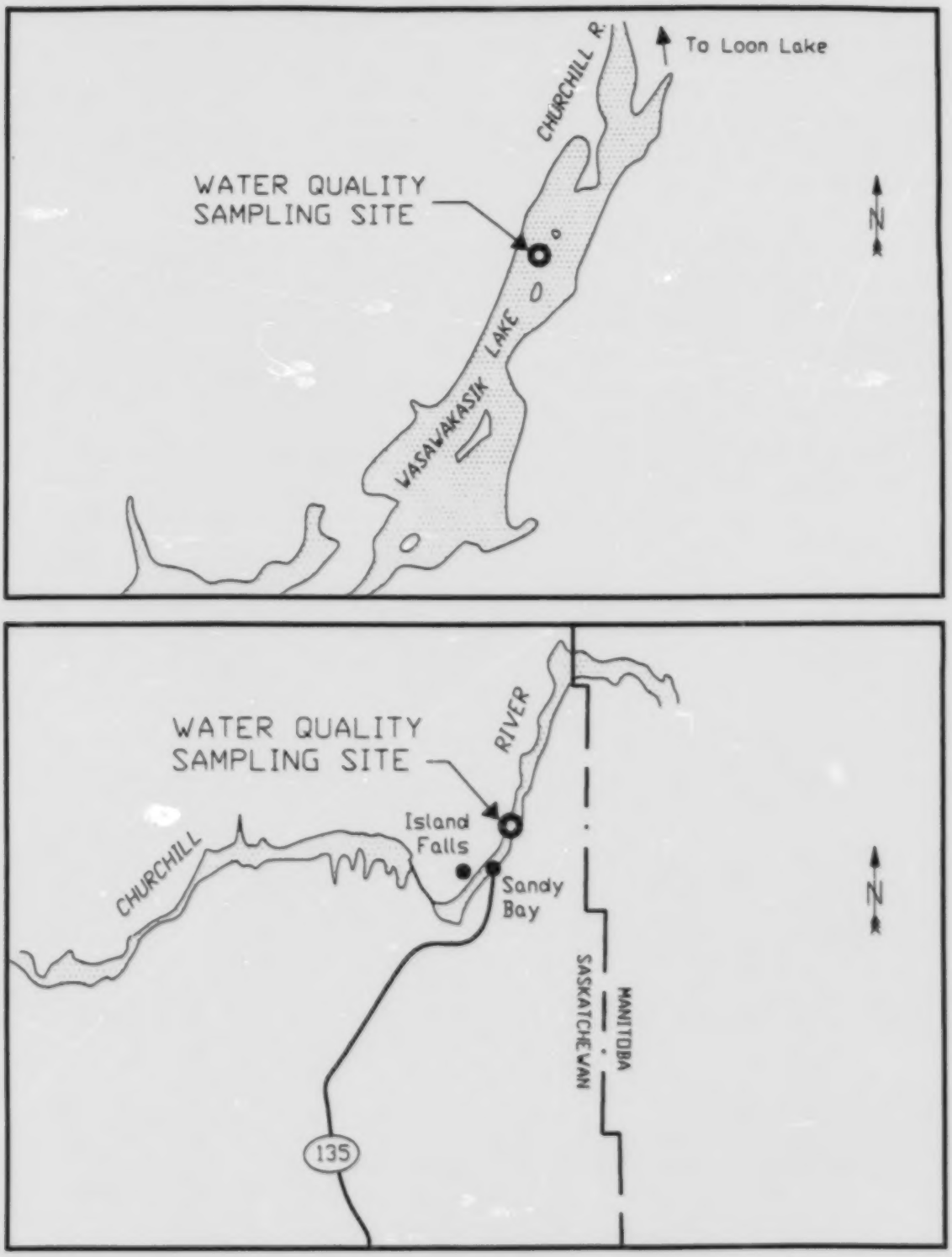
- Low winter dissolved oxygen.

REPORTS AVAILABLE FOR THIS SITE:

- PPWB Report #50, Interprovincial river water quality data at Manitoba-Saskatchewan border, January 1960 to April 1974.

PREPARED OR REVISED BY: Bob Woychuk DATE: February, 1989

Churchill River at Outlet of Wasawakasik Lake



Churchill River at Outlet of Wasawakasik Lake

NAQUADAT NUMBER: 00SA06EA0003 WSC REFERENCE NUMBER: 06EA003

PROJECT REFERENCE NUMBER: 315 SUBMITTER I.D.: 0462

LOCATION: Latitude: 55° 36' 29" Longitude: 102° 11' 44"

Sampling location is near the outlet off the main channel. This off channel site makes it safe for winter sampling. Samples are collected from plane float (summer), on ice in winter.

STATION ESTABLISHED: December, 1960

PERIOD OF RECORD: 1960 -

STATION TYPE: Monthly, major ions, nutrients, heavy metal, biocides. Continuous MI,N,HM,B Data since 1974.

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Specific Cond.*	*Total Coliform*	*Fecal Coliform*
WINTER	*8 - 14*	*7 - 8*	*1 - 5*	*50 - 100*	*0 - 50*	*0 - 10*
SPRING	*8 - 14*	*7 - 8*	*2 - 8*	*50 - 100*	*0 - 50*	*0 - 10*
SUMMER	*6 - 12*	*7 - 8*	*3 - 10*	*50 - 200*	*0 - 50*	*0 - 10*
FALL	*8 - 14*	*7 - 8*	*2 - 8*	*50 - 150*	*0 - 50*	*0 - 10*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1928 -

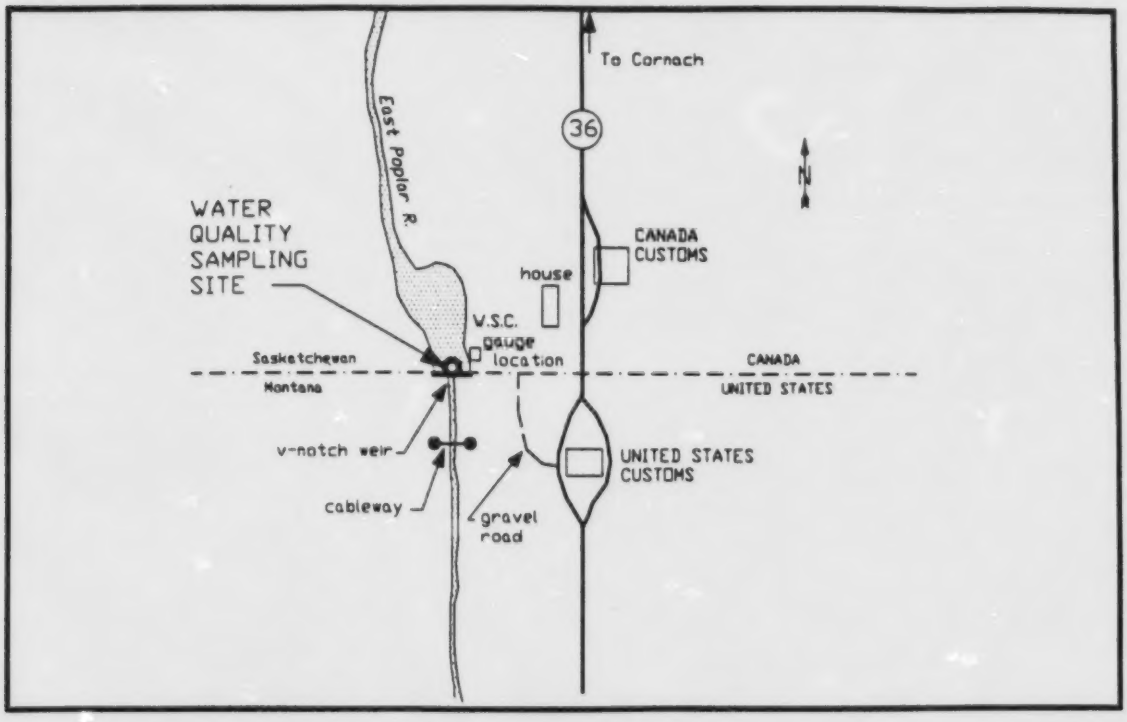
SEDIMENT DATA: Not available

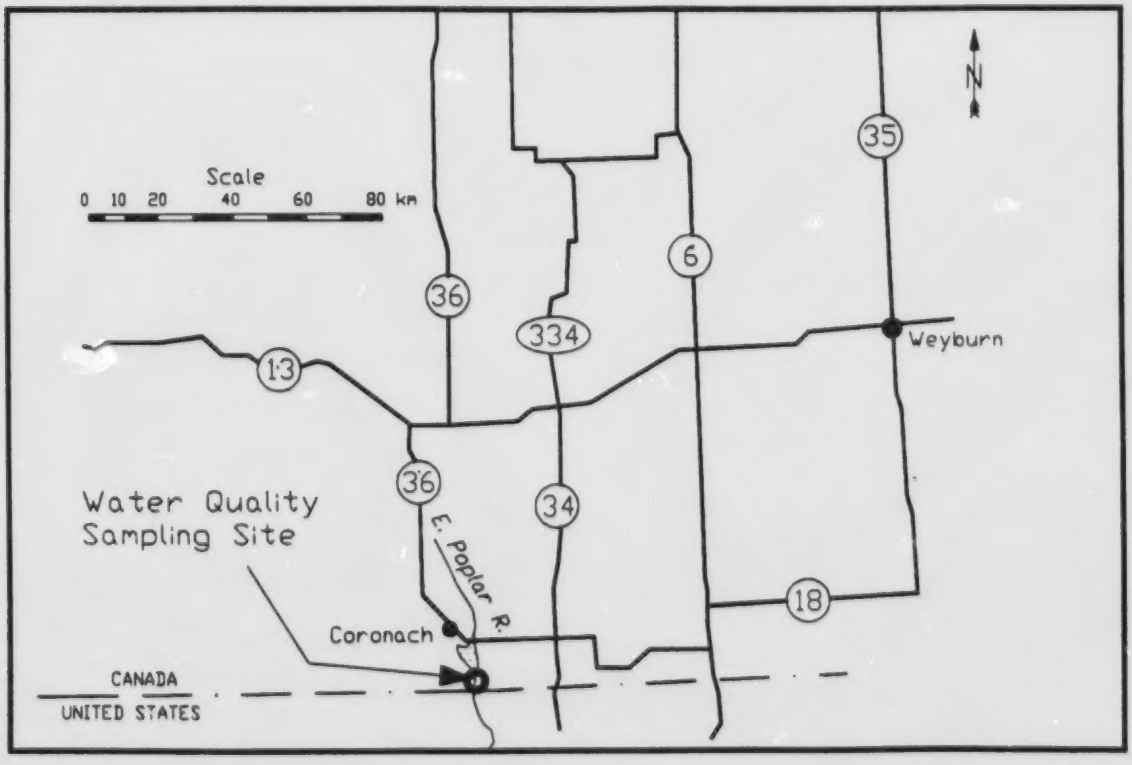
ISSUES:

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: Bob Woychuk DATE: February, 1989

East Poplar River at International Boundary





East Poplar River at International Boundary

NAQUADAT NUMBER: 00SA11AE0008 WSC REFERENCE NUMBER: 11AE003

PROJECT REFERENCE NUMBER: 312 SUBMITTER I.D.: 0003

LOCATION: Latitude: 49° 00' 00" Longitude: 105° 24' 36"

Sampling location at the V-notch weir at the international boundary. As the weir is kept unfrozen by customs officials, sampling is conducted by hand year-round without the need of an ice auger. The weir may become icy during the winter season.

STATION ESTABLISHED: July 1975

PERIOD OF RECORD: July 1975 - Ongoing

STATION TYPE: Network, radionuclides, heavy metal & herbicide,

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Spec. Cond.*	*Total Coliform*	*Fecal Coliform*
WINTER	*4.0*	*7.3*	*1.5*	*1500*	*2*	*< 10*
SPRING	*12.0*	*8.6*	*> 6.0*	*1100*	*< 2*	
SUMMER	*11.0*	*8.0*	*6.0*	*800*	*< 2*	*< 10*
FALL	*10.0*	*8.0*	*4.0*	*1350*	*< 2*	*< 10*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1931 -

SEDIMENT DATA: Not Available.

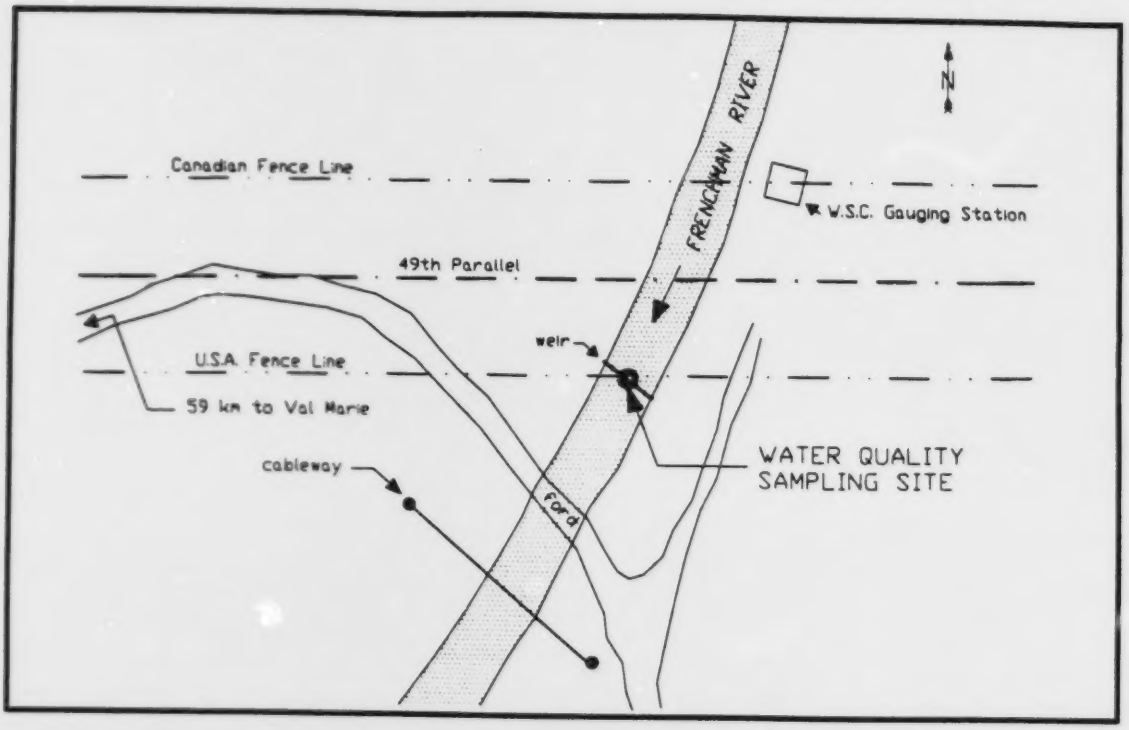
ISSUES:

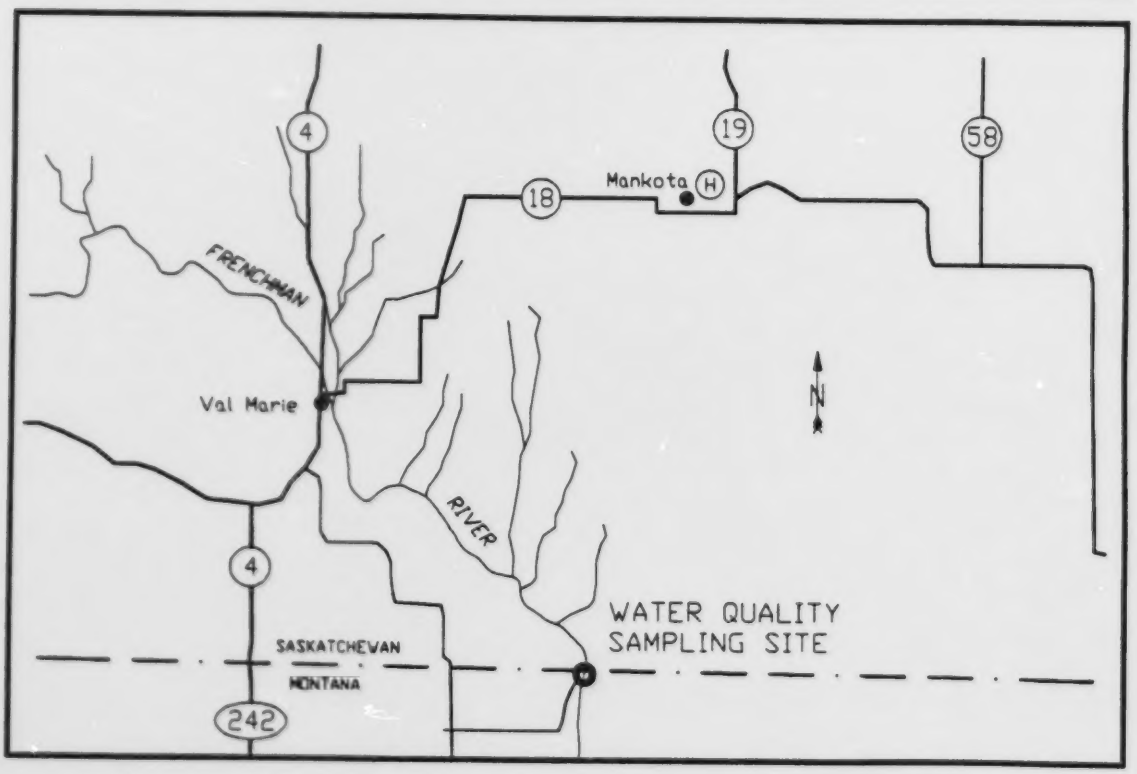
- Waters should not be polluted crossing the boundary.

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: P.W. Neil DATE: February 23, 1989

Frenchman River at 49th Parallel





Frenchman River at 49th Parallel

NAQUADAT NUMBER: 00SA11AC0002 WSC REFERENCE NUMBER: ———

PROJECT REFERENCE NUMBER: 312 SUBMITTER I.D.: 0001

LOCATION: Latitude: 49° 00' 00" Longitude: 107° 18' 10"

Sampling location at the V-notch weir at the international boundary.

STATION ESTABLISHED: May 30, 1979

PERIOD OF RECORD: May 30, 1979 - Ongoing

STATION TYPE: Network, field physicals, nutrients, bacteria, major ions, metals & herbicide. Bacteria samples are shipped to Regina for analysis.

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Specific Conductance*
WINTER			
SPRING			
SUMMER	*8 - 11*	*7 - 8.5*	*500 - 800*
FALL			

Samples are collected by WSC field technicians monthly between March 1 to October 31.

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1916

SEDIMENT DATA: Not Available.

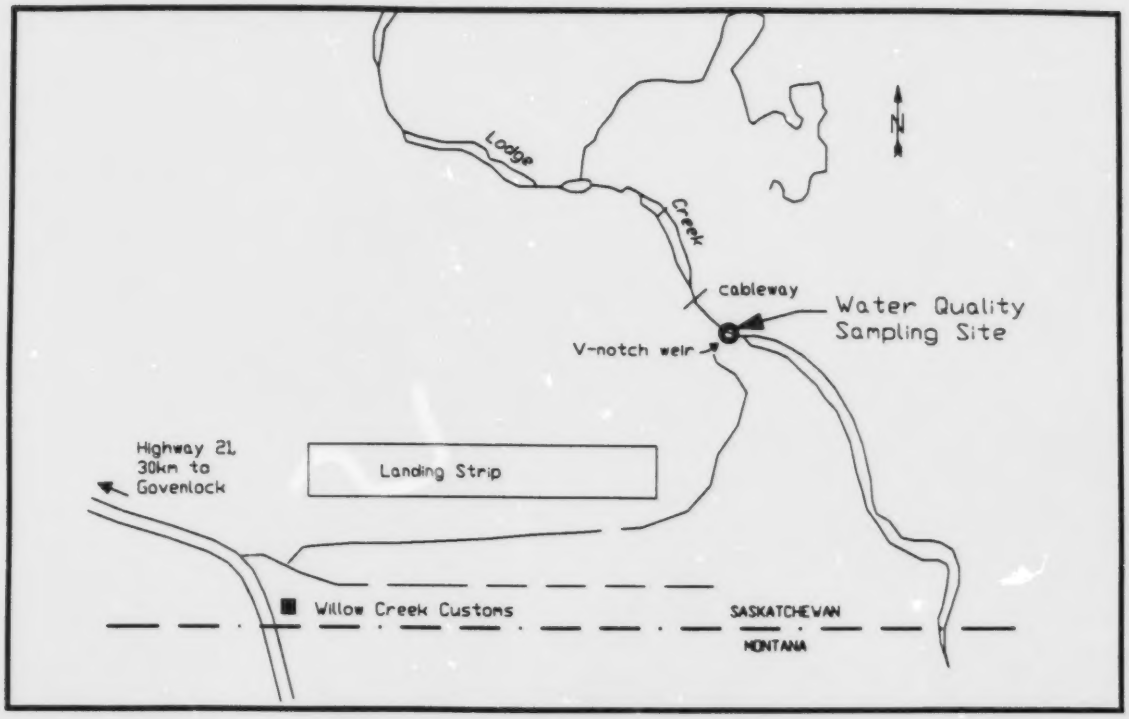
ISSUES:

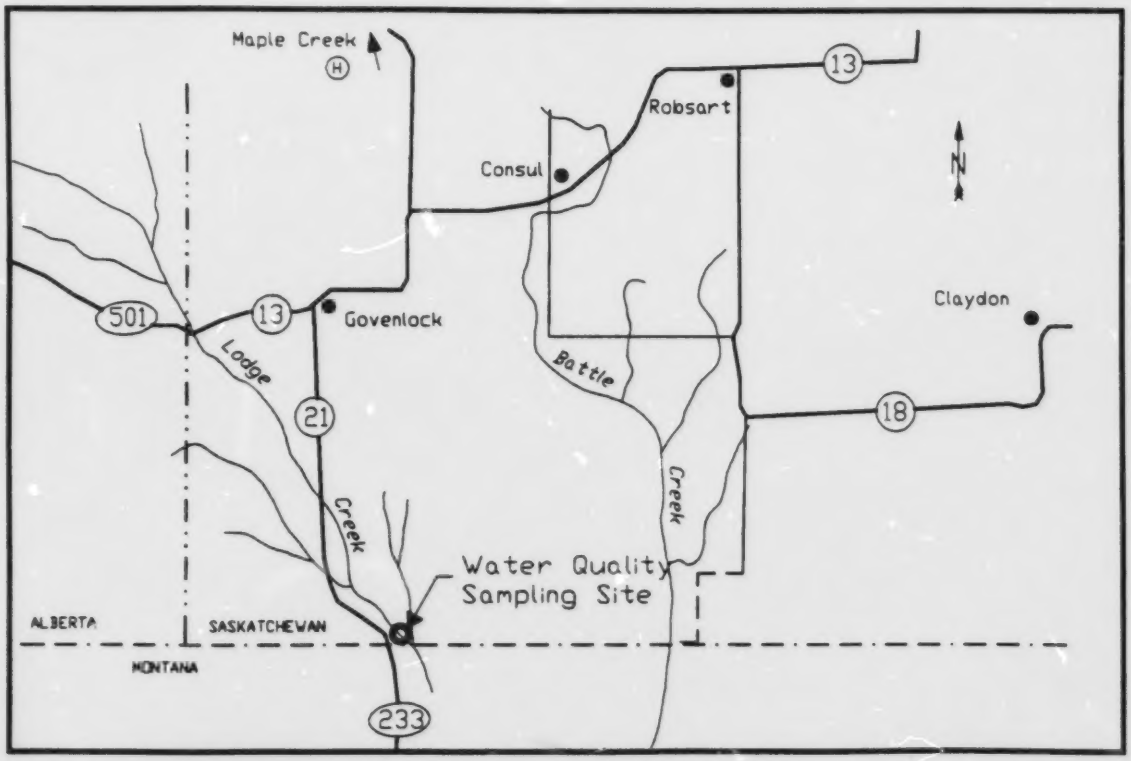
- The purpose of this station is to monitor water quality crossing the international boundary to meet commitments under the Boundary Waters treaty.
- Discharge at the station is regulated by upstream reservoirs.

REPORTS AVAILABLE FOR THIS SITE: None

PREPARED OR REVISED BY: P.W. Neil DATE: February 23, 1989

Lodge Creek near Willow Creek at Highway 21





Lodge Creek near Willow Creek at Hwy 21

NAQUADAT NUMBER: 00SA11AB0007 WSC REFERENCE NUMBER: 11AB006

PROJECT REFERENCE NUMBER: 312 SUBMITTER I.D.: 0001

LOCATION: Latitude: 49° 00' 24" Longitude: 109° 43' 30"

Sampling location is at the V-notch weir at the international boundary. Zero discharge usually occurs during mid-summer months.

STATION ESTABLISHED: June 5, 1979

PERIOD OF RECORD: June 5, 1979 - Ongoing

STATION TYPE: Network, field physicals, nutrients, bacteria, major ions, metals & herbicide. Bacteria are shipped to Regina for analysis.

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Specific Conductance*
WINTER			
SPRING			
SUMMER	*9.0*	*7 - 9.3*	*300 - 700*
FALL			

Samples are collected by WSC field technicians monthly between March 1 to October 31.

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1951

SEDIMENT DATA: Not Available.

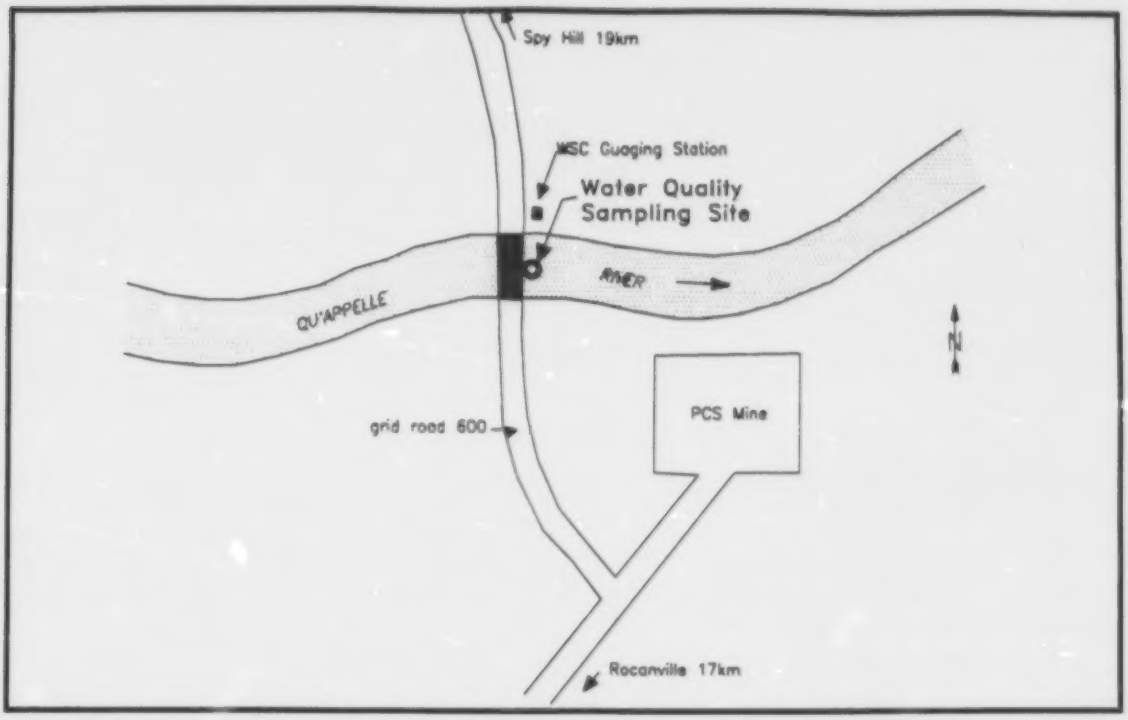
ISSUES:

- The purpose of this station is to monitor water quality crossing the international boundary to meet commitments under the Boundary Waters treaty.
- Discharge at the station is regulated by upstream reservoirs.

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: P.W. Neil DATE: February, 1989

Qu'Appelle River near Welby



Qu'Appelle River Near Welby

NAQUADAT NUMBER: 05SA05JM0014 WSC REFERENCE NUMBER: 05JM014

PROJECT REFERENCE NUMBER: 315 SUBMITTER I.D.: 0462

LOCATION: Latitude: 50° 29' 02" Longitude: 101° 32' 35"

Samples are collected from bridge on grid road. Under winter conditions, samples are collected just downstream of bridge.

STATION ESTABLISHED: March, 1974

PERIOD OF RECORD: 1974 -

STATION TYPE: Monthly, major ions, nutrients, heavy metals, biocides.

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Spec. Cond.*	*Total Coliform*	*Fecal Coliform*
WINTER	*6 - 14*	*7.5 - 8.5*	*5 - 10*	*900 - 1900*	*< 0 - 400*	*< 0 - 50*
SPRING	*7 - 14*	*7.5 - 8.5*	*5 - 20*	*700 - 1600*	*< 0 - 500*	*< 0 - 70*
SUMMER	*6 - 14*	*7.5 - 8.5*	*5 - 70*	*900 - 1700*	*< 0 - 400*	*< 0 - 50*
FALL	*7 - 14*	*7.5 - 8.5*	*5 - 50*	*900 - 1700*	*< 0 - 400*	*< 0 - 50*

ISSUES:

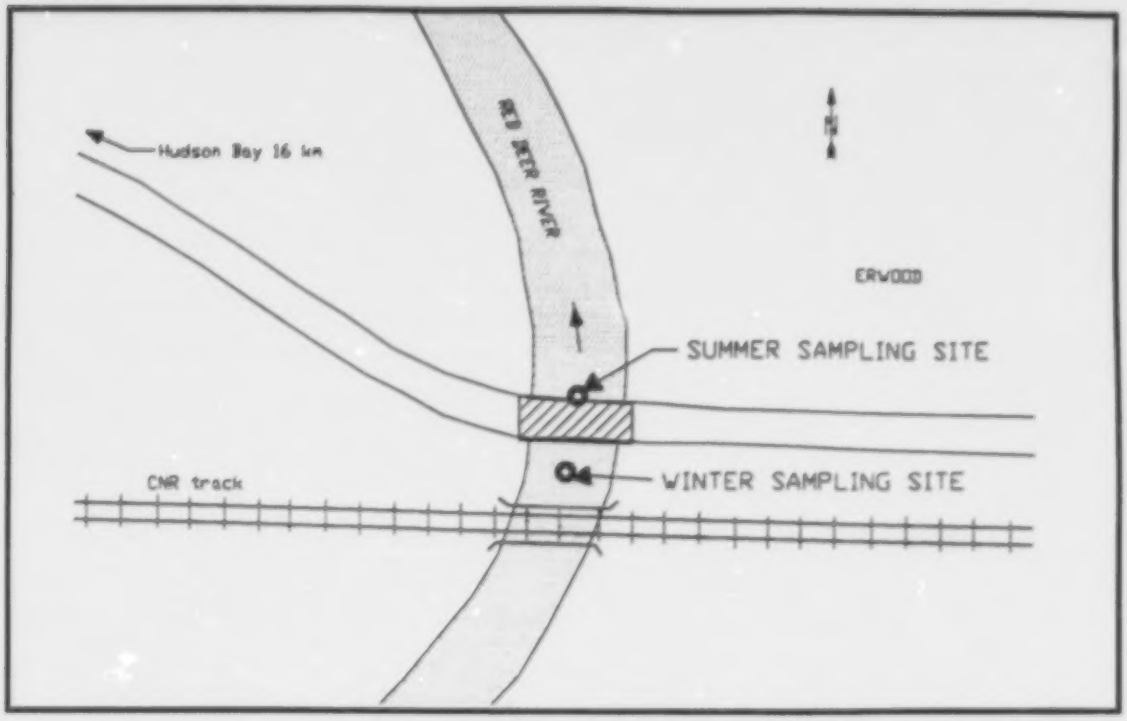
- Interprovincial river water quality data.
- Quality affected by agriculture, and mining.

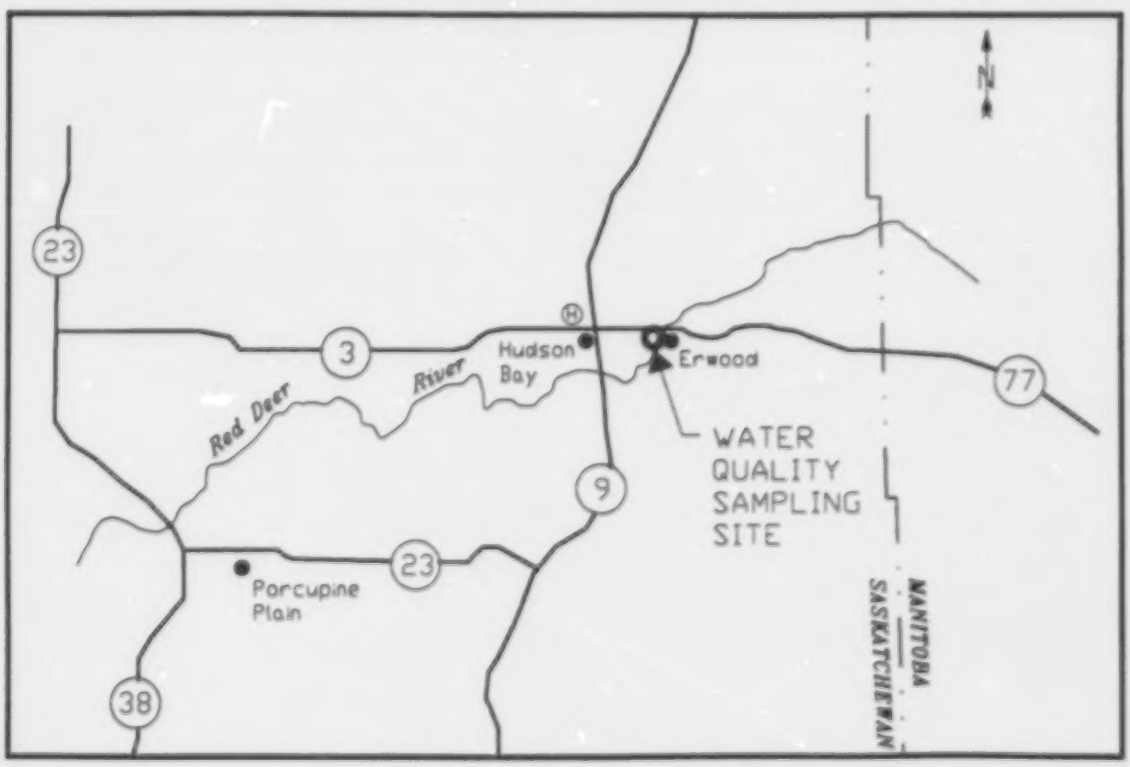
REPORTS AVAILABLE FOR THIS SITE:

- PPWB Report #50, "Interprovincial River Water Quality Data at the Alberta-Saskatchewan and Manitoba-Saskatchewan Borders, January 1960 to April 1974.
- Graphical summaries of water quality data collected at St. Lazare (and area) are available on request from PPWB Secretariat.

PREPARED OR REVISED BY: Bob Woychuk DATE: February, 1989

Red Deer River Near Erwood





Red Deer River near Erwood

NAQUADAT NUMBER: 00SK05LC0001 WSC REFERENCE NUMBER: 05LC001

PROJECT REFERENCE NUMBER: 315 SUBMITTER I.D.: 0462

LOCATION: Latitude: 52° 52' 05" Longitude: 102° 10' 59"

Sampling location is at bridge on Highway 3, approximately 16 km east of Hudson Bay. During open water, samples collected from bridge. During winter, samples are collected upstream, approximately 30 m from bridge.

STATION ESTABLISHED: September, 1966

PERIOD OF RECORD: 1966 -

STATION TYPE: Monthly, major ions, nutrients, heavy metals, biocides.

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Spec. Cond.*	*Total Coliform*	*Fecal Coliform*
WINTER	*2 - 14*	*7 - 8.0*	*200 - 1200*	*0 - 300*	*0 - 70*
SPRING	*6 - 14*	*7 - 8.0*	*200 - 600*	*0 - 500*	*0 - 100*
SUMMER	*6 - 14*	*7 - 8.5*	*200 - 600*	*0 - 300*	*0 - 70*
FALL	*6 - 14*	*7 - 8.5*	*300 - 1500*	*0 - 300*	*0 - 70*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1953 -

SEDIMENT DATA: 1980 -

ISSUES:

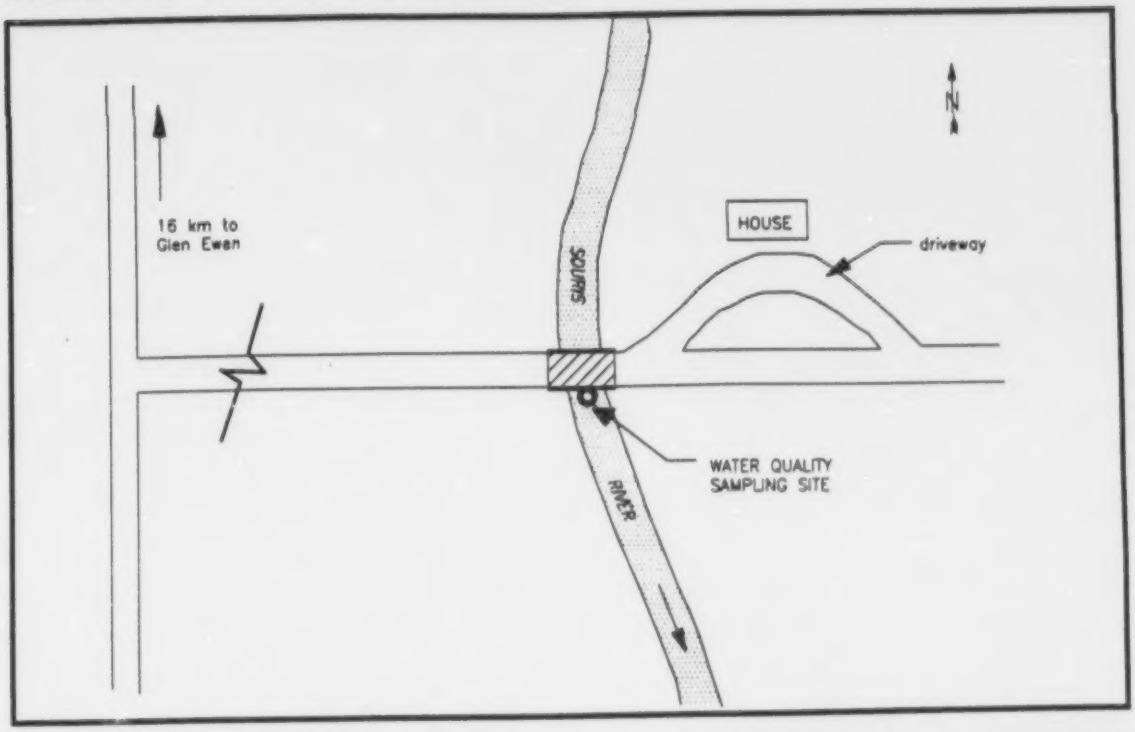
- Lumbering and Agriculture

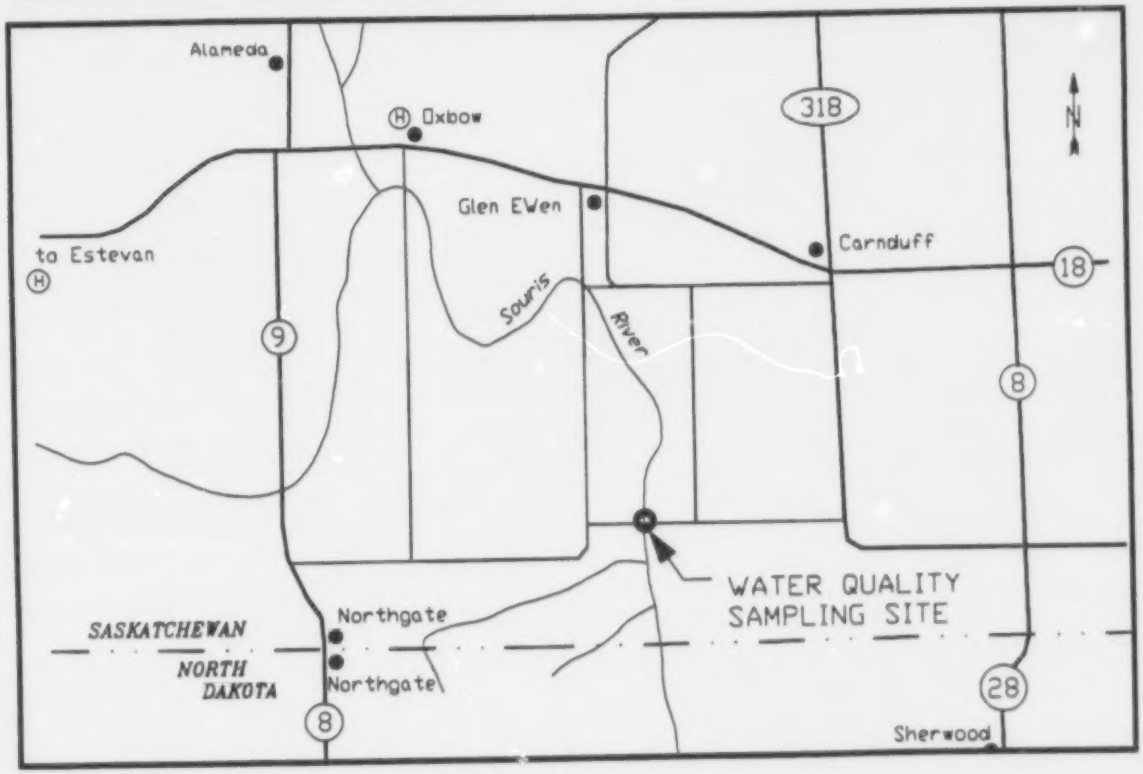
REPORTS AVAILABLE FOR THIS SITE:

- PPWB Report #50 (1960 - 1974)

PREPARED OR REVISED BY: Bob Woychuck DATE: February, 1989

Souris River 16 km South of Glen Ewen





Souris River 16 km S. of Glen Ewen

NAQUADAT NUMBER: 00SA05ND0003 WSC REFERENCE NUMBER: 05ND001

PROJECT REFERENCE NUMBER: 312 SUBMITTER I.D.: 0003

LOCATION: Latitude: 49° 03' 31" Longitude: 101° 59' 29"

Sampling is at bridge on grid road running E-W (16 km directly south of Glen Ewen). During ice-cover, sample down stream of the bridge.

STATION ESTABLISHED: May, 1988 (replaced 00SA05ND0001)

PERIOD OF RECORD: May 1988 - Ongoing

STATION TYPE: Monthly, major ions, nutrients, heavy metals, & biocides

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Spec. Cond.*	*Total Coliform*	*Fecal Coliform*
WINTER	*0 - 4*	*6 - 7.9*	*1 - 50*	*800 - 2000*	*< 2 - 50*	*< 2 - 30*
SPRING	*3 - 8*	*6 - 8.1*	*1 - 80*	*100 - 1500*	*< 2 - 100*	*< 2 - 40*
SUMMER	*5 - 9*	*7 - 8.6*	*1 - 80*	*300 - 1500*	*< 2 - 50*	*< 2 - 20*
FALL	*6 - 13*	*7 - 8.3*	*1 - 80*	*300 - 200*	*< 2 - 100*	*< 2 - 40*

WSC HYDROMETRIC STATION PERIOD OF RECORD: Monitored at Glen Ewen Site

SEDIMENT DATA: Not Available

ISSUES:

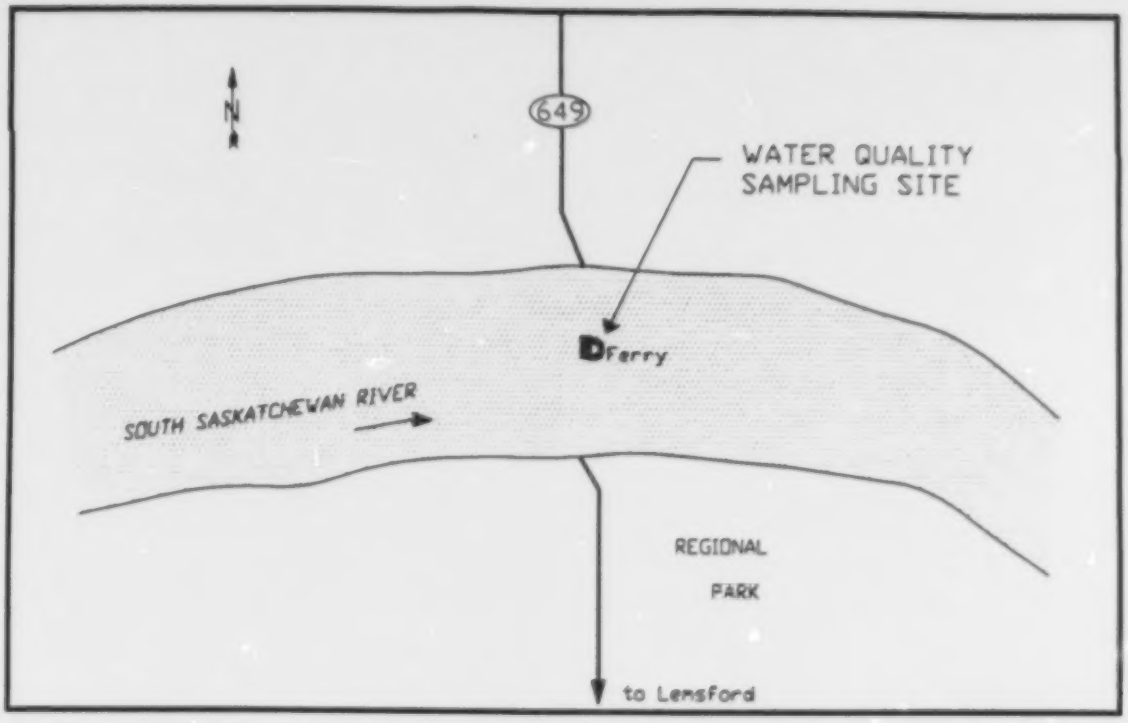
- In 1987, the village of Glen Ewen planned to build a pipeline to discharge effluent from a sewage lagoon to the Souris River. As changes could occur to river quality, the Glen Ewen site was moved downstream to monitor water quality alterations.
- With the planned construction of the Rafferty and Alameda dams there has been increased attention on water supply and quality. Water quality data from this site could serve as a means to monitor any effects from these projects.

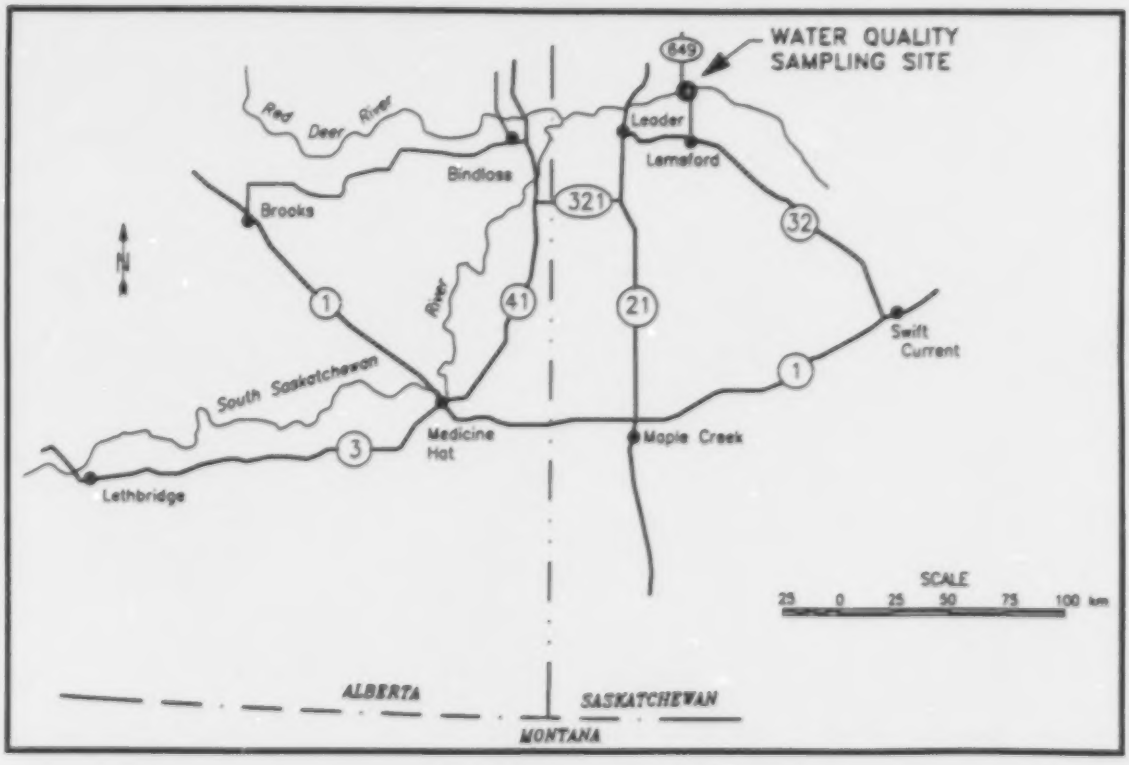
REPORTS AVAILABLE FOR THIS SITE:

- Discussion paper comparing data from Glen Ewen to this site.

PREPARED OR REVISED BY: P.W. Neil DATE: February, 1989

South Saskatchewan River at Lemsford Ferry





South Saskatchewan River at Lemsford Ferry

NAQUADAT NUMBER: 00SA05HB0001 **WSC REFERENCE NUMBER**: 05HB001

PROJECT REFERENCE NUMBER: 351 **SUBMITTER I.D.**: 0003

LOCATION: Latitude: 51° 01' 18" **Longitude**: 109° 07' 30"

Sampling location is at centre of river. Samples are taken from upstream of ferry boat. Winter samples taken with ice auger at centre of river.

STATION ESTABLISHED: 1965

PERIOD OF RECORD: 1965 to present

STATION TYPE: Weekly, physicals, nutrients.

EXPECTED FIELD OBSERVATIONS: No field measurements.

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1958 - 70, 1975

SEDIMENT DATA: 1958 - 70, 1975

ISSUES:

- Trophic status and nutrient loadings.

REPORTS AVAILABLE FOR THIS SITE:

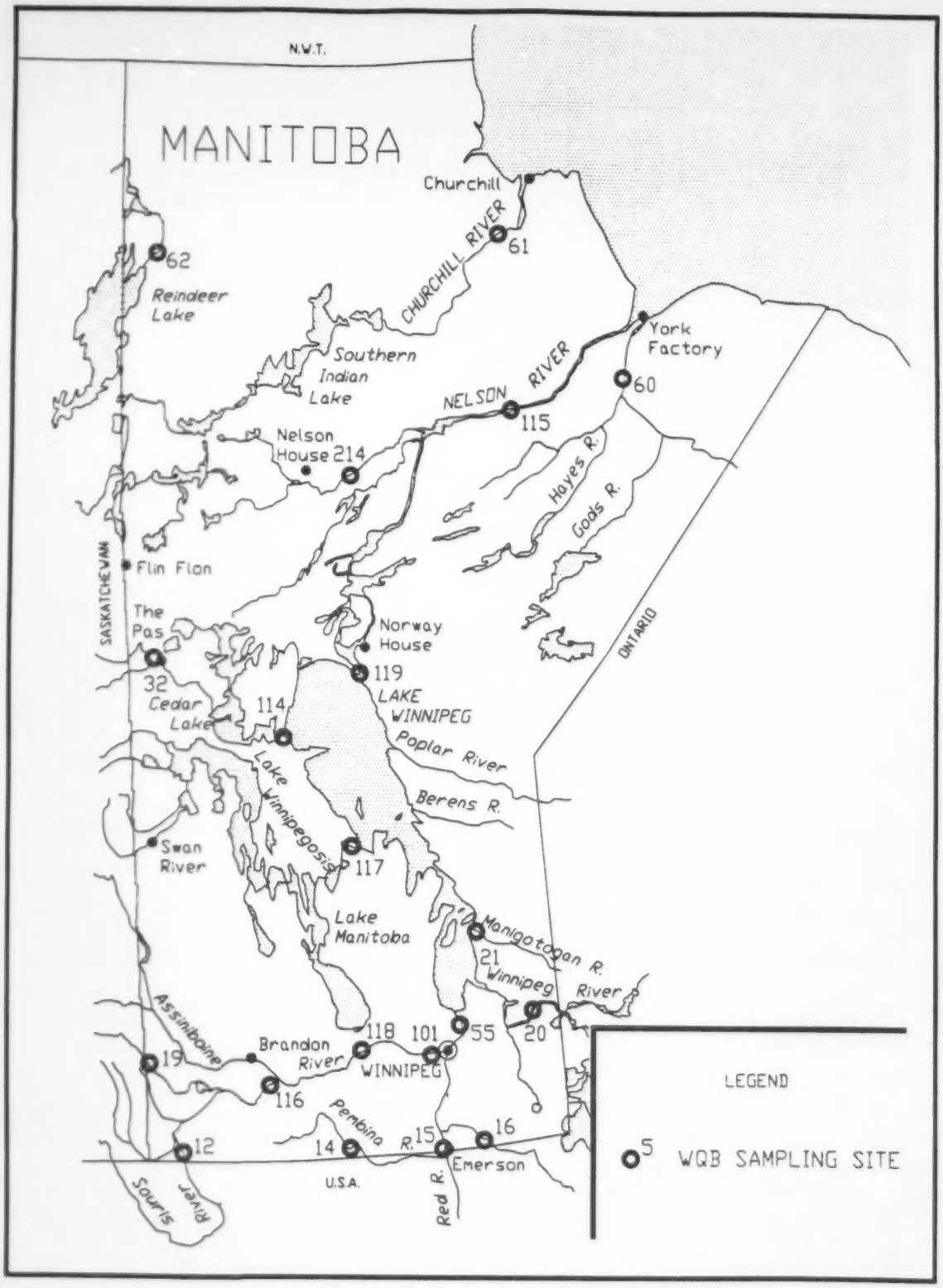
- Lake Diefenbakers and Upper South Saskatchewan River: Water Quality Study (1984-1985).

PREPARED OR REVISED BY: Paul Neil **DATE**: January 23, 1991

MANITOBA

WATER QUALITY MONITORING

Environment Canada
Water Quality Branch
Manitoba District Office
513 - 269 Main Street
Winnipeg, Manitoba
R3C 1B2
(204) 983-5035


N.W.T.
MANITOBA
Churchill
CHURCHILL RIVER
61
62
Reindeer Lake
Southern Indian Lake
NELSON RIVER
York Factory
60
115
Nelson House
214
Hayes R.
Gods R.
SASKATCHEWAN
Flin Flon
The Pas
32
Norway House
119
ONTARIO
Cedar Lake
114
LAKE WINNIPEG
Poplar River
Lake Winnipegosis
Berens R.
Swan River
117
Lake Manitoba
Manigotogan R.
21
Winnipeg River
Assiniboine
Brandon
118
101
55
20
19
River
WINNIPEG
116
Pembina R.
15
16
12
14
Emerson
U.S.A.
Red R.
Souris River
LEGEND
5 WQB SAMPLING SITE

MANITOBA WATER QUALITY MONITORING

PROJECT 313 — Canada-Manitoba Water Quality Agreement

118. Assiniboine River at Highway #305 upstream of Portage La Prairie.
116. Souris River at Treesbank

Monthly sampling for these provincial agreement sites is carried out by the Province of Manitoba on a work shared basis.

12. Souris River at Coulter, Highway #251
14. Pembina River at Windygates
16. Roseau River at Gardenton

Monthly sampling for these international sites is carried out for a wide variety of parameters. Unusual vales may be followed up with re-surveys. Governments concerned are notified of potential and real problems.

59. Nelson River below Kettle Generating Station
60. Hayes River below junction with Gods River
61. Churchill River above Red Head Rapids
62. Cochrane River near Brochet

These northern Manitoba sites are sampled by the Water Resources Branch on a quarterly basis.

19. Pipestone Creek, 0.4 km from Cromer on Highway #255
20. Winnipeg River at Pointe Du Bois
21. Manigotagan River at Highway 304 bridge

Pipestone Creek is operated due to its significance as a trans-boundary stream with political and provincial concerns. The Winnipeg River is monitored as it is the largest input into Lake Winnipeg. The Manigotagan station is operated as a benchmark pre-cambrian shield site that has not been influenced by man's activities.

101. Assiniboine River at Highway #334 near Headingley
114. Saskatchewan River downstream of Grand Rapids Power Plant
117. Dauphin River near Dauphin
119. Nelson River at Jenpeg
214. Burntwood River near Thompson at Highway #391

These major international sites are sampled because of their significance and data requirements for state of the environment reporting.

55. Red River at Selkirk

Monthly sampling of this quality control site is carried out by Canada and the Province of Manitoba.

PROJECT 306 — International Red River Pollution Board

15. Red River at Emerson

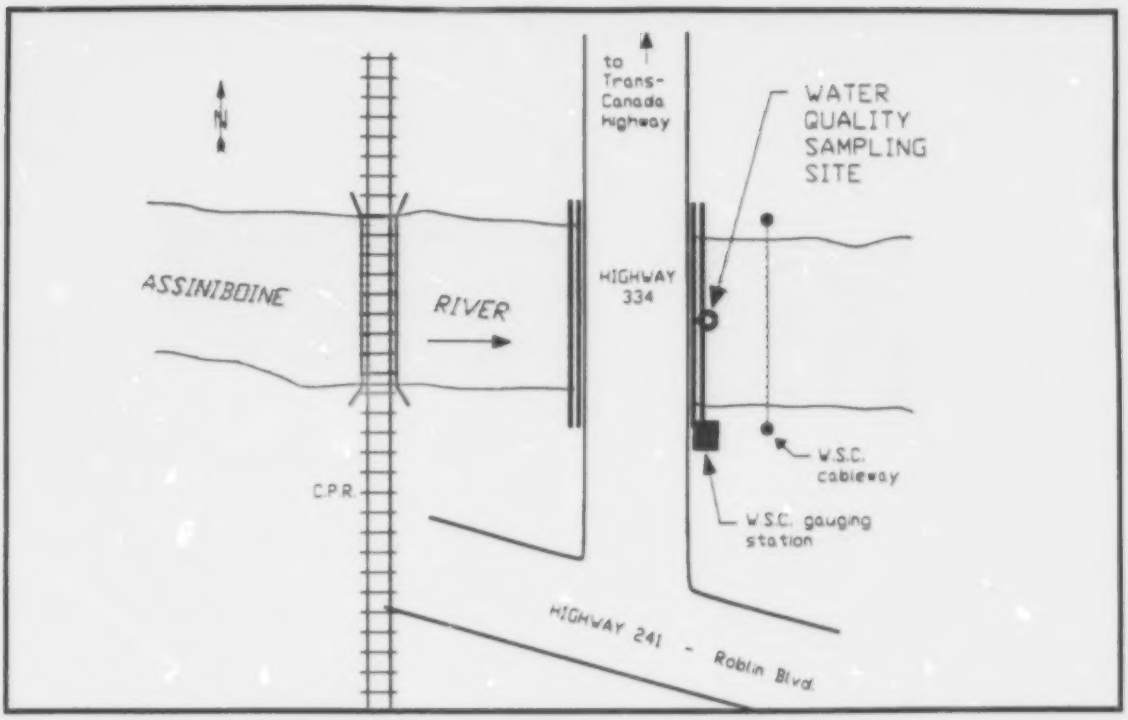
Under IJC, the Red River monitoring was established in 1968 to provide a continuous surveillance of water quality at the Canada-U.S. border. A monitor is operated on a continuous basis obtaining dissolved oxygen, pH, conductivity, chloride and temperature. Monthly samples are also collected.

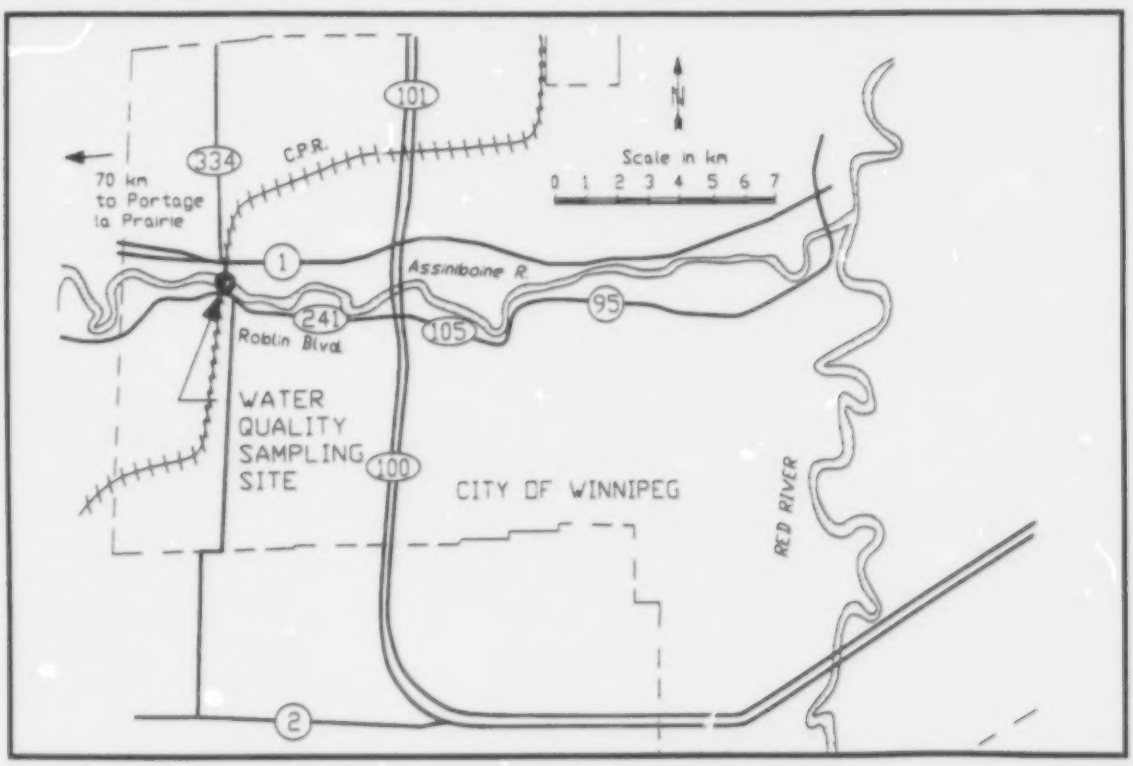
PROJECT 315 — Prairie Provinces Water Board Monitoring (Manitoba-Saskatchewan Boundary)

32. Saskatchewan River above Carrot River

Five other sites along the Saskatchewan-Manitoba border are described in the Saskatchewan section of this book. For these interprovincial rivers the Water Quality Branch provides data, interpretation, and advice to the Prairie Provinces Water Board (PPWB). Stations are sampled monthly.

Assiniboine River at Highway #334 (Headingly, Manitoba)





Assiniboine River at Highway 334 (Headingly, Manitoba)

NAQUADAT NUMBER: 00MA05MJ0006 **WSC REFERENCE NUMBER**: ——

PROJECT REFERENCE NUMBER: 313 **SUBMITTER I.D.**: 0003

LOCATION: Latitude: 49° 51' 10" Longitude: 97° 24' 15"

Year round sampling is done on downstream side of the bridge at mid channel.

STATION ESTABLISHED: April, 1989

PERIOD OF RECORD: April, 1989 - ONGOING

STATION TYPE: Monthly major ions, nutrients, quarterly heavy metals and biocides.

EXPECTED FIELD OBSERVATIONS:

	DO	pH	Turbidity	Specific Cond.	Total Coliform	Fecal Coliform
WINTER	7 - 14	7 - 8.5	2 - 20	600 - 1700	10 - 2200	10 - 900
SPRING	10 - 14	7 - 8.5	10 - 300	300 - 1000	5 - 500	0 - 100
SUMMER	5.5 - 12	7 - 8.5	10 - 100	500 - 1000	0 - 300	0 - 300
FALL	6 - 13	7 - 8.5	5 - 50	600 - 1200	0 - 300	0 - 300

WSC HYDROMETRIC STATION PERIOD OF RECORD:

SEDIMENT DATA:

ISSUES:

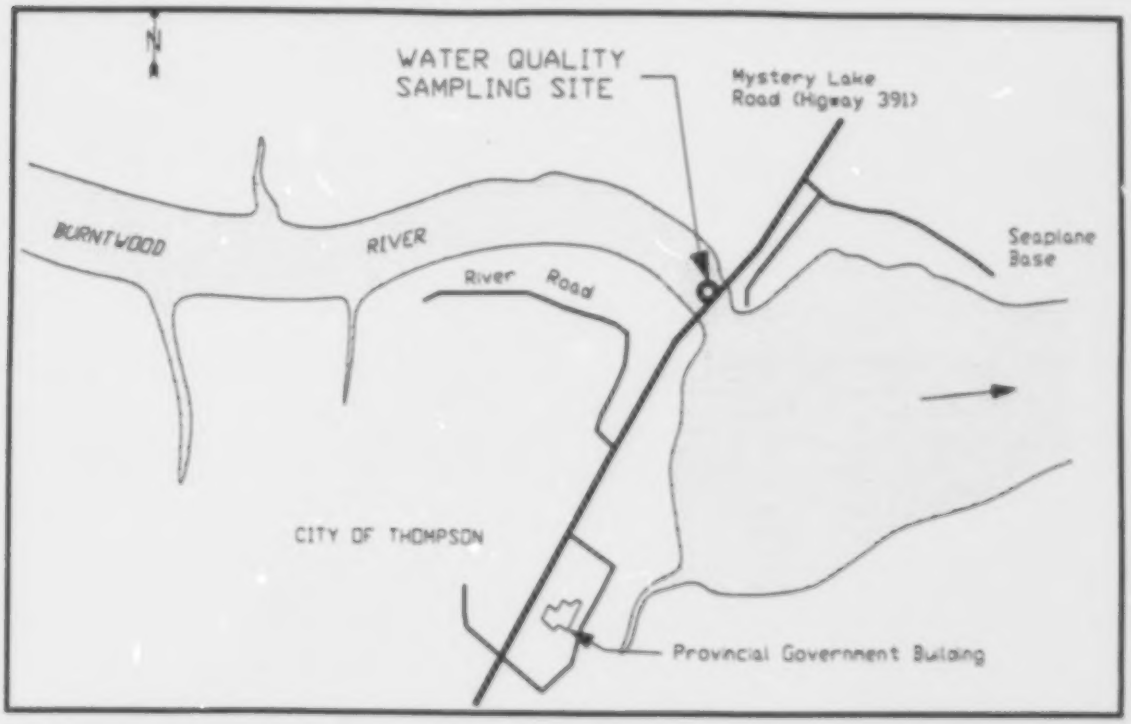
- Input into Red River

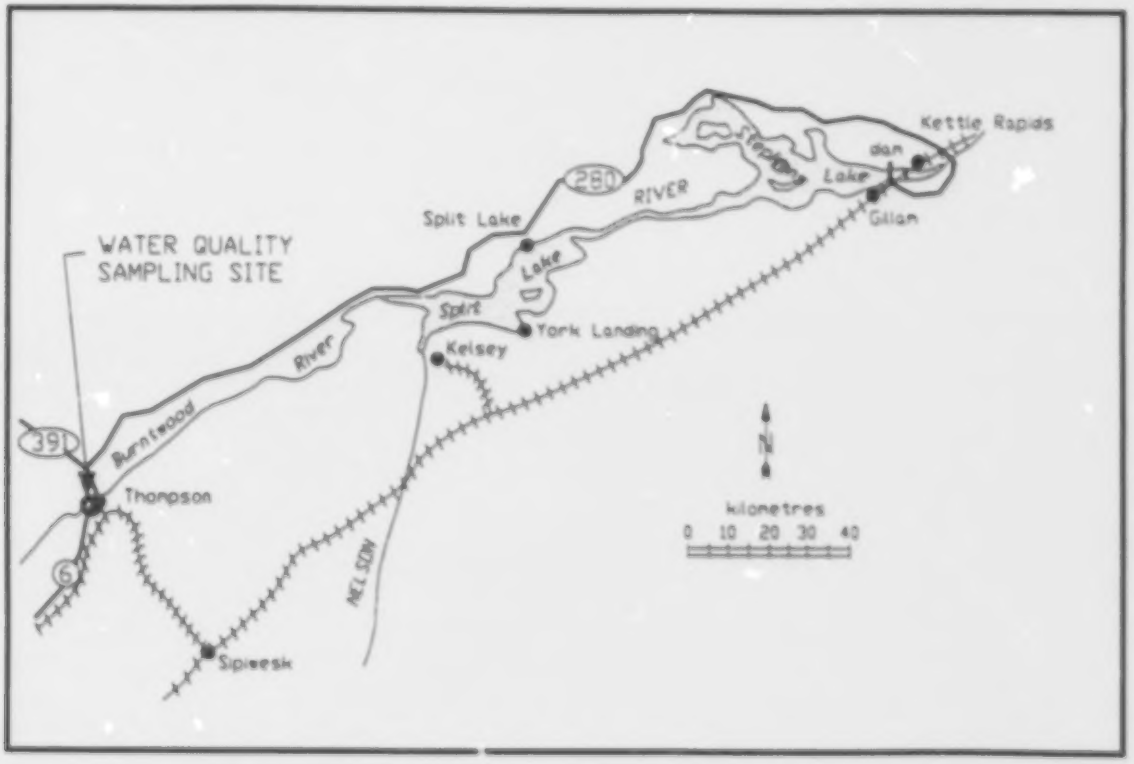
REPORTS AVAILABLE FOR THIS SITE:

- NAQUADAT - ORACLE

PREPARED OR REVISED BY: Bob Woychuk **DATE**: December 10, 1990

Burntwood River near Thompson at Highway #391





Burntwood River near Thompson at Highway #391

NAQUADAT NUMBER: 00MA05TG0001 **WSC REFERENCE NUMBER**: WQ 93

PROJECT REFERENCE NUMBER: 313 **SUBMITTER I.D.**: 0003

LOCATION: Latitude: 55° 44' 30" Longitude: 97° 54' 00"

Samples collected from bridge on route 391.

STATION ESTABLISHED: 1987

PERIOD OF RECORD: 1987 -

Apparently this station was previously located upstream of Thompson at the junction of the Taylor River. Samples were collected here from 1967-70, and 1972-78.

STATION TYPE: Monthly nutrients and major ions. Quarterly sampling also includes metals and biocides.

EXPECTED FIELD OBSERVATIONS:

	DO	pH	Turbidity	Specific Cond.	Total Coliform	Fecal Coliform
WINTER	10 - 14.5	7 - 8	15 - 50	100 - 150	< 2 - 160	< 2 - 160
SPRING	10 - 14	7 - 8	15 - 30	100 - 130	< 2 - 100	< 2 - 100
SUMMER	7 - 12	7 - 8	15 - 50	100 - 130	< 2 - 80	< 2 - 80
FALL	10 - 14	7 - 8	15 - 40	100 - 130	< 2 - 80	< 2 - 80

WSC HYDROMETRIC STATION PERIOD OF RECORD:

SEDIMENT DATA:

ISSUES:

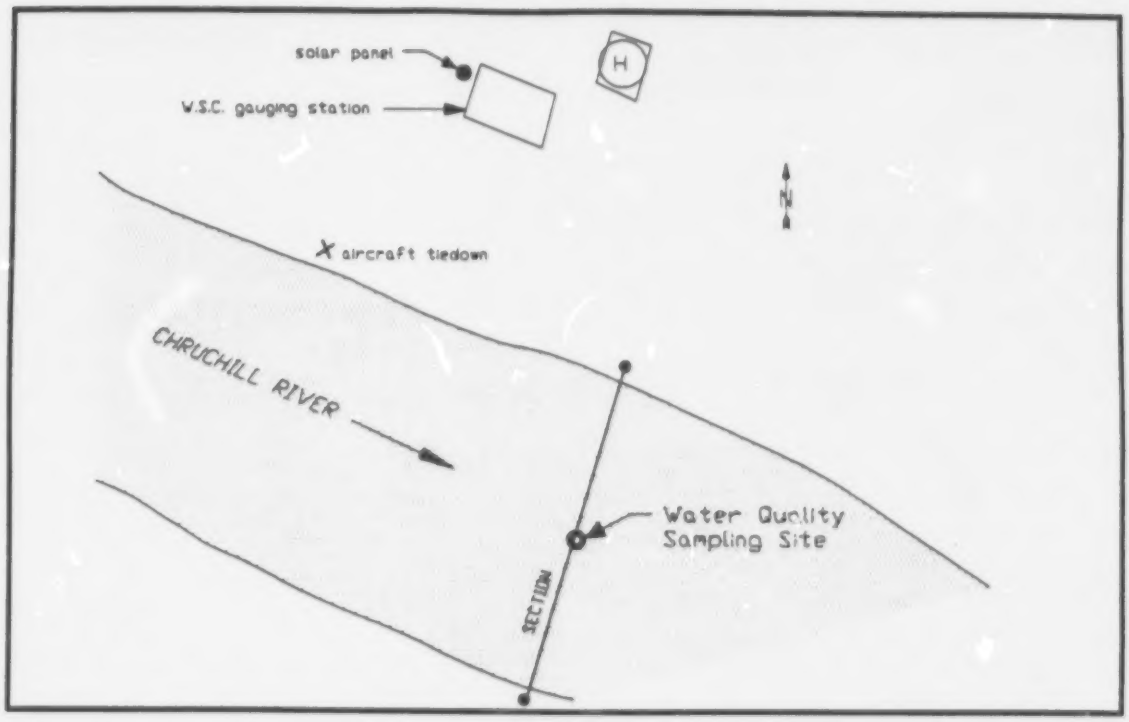
- Station is on diversion route of Curchill River Diversion.
- INCO smelting plant is located in Thompson.
- City of Thompson draws drinking water from river.

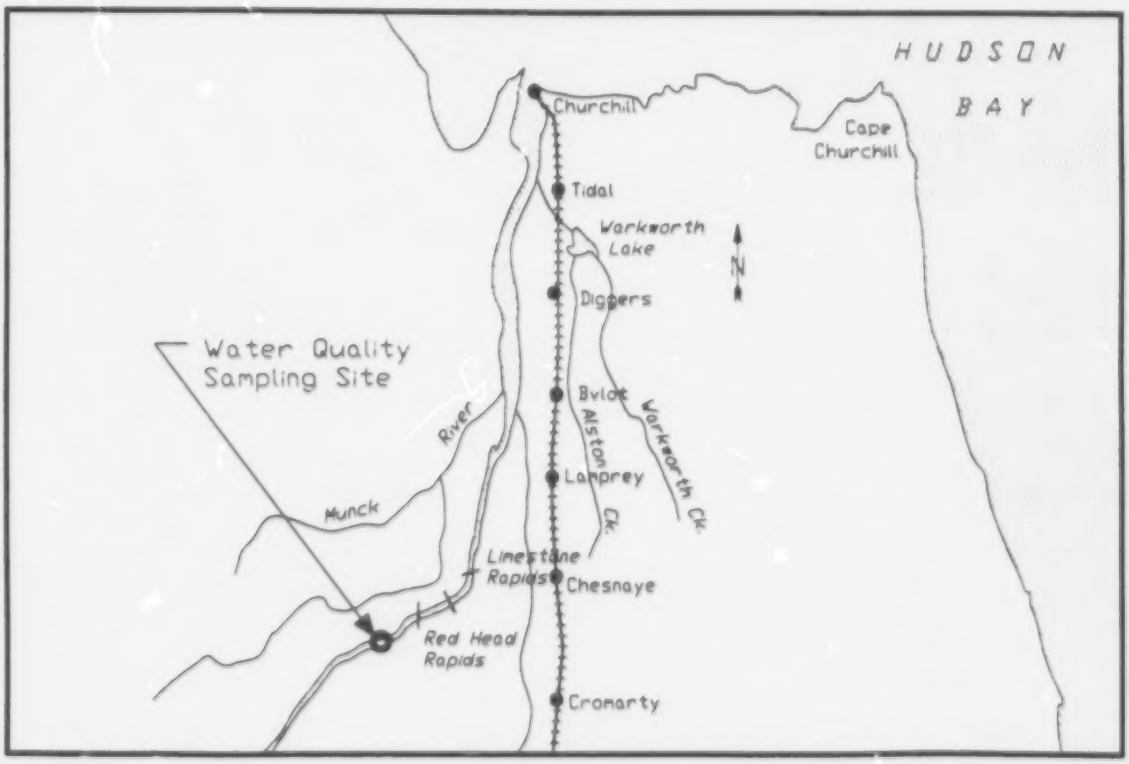
REPORTS AVAILABLE FOR THIS SITE:

- NAQUADAT - ORACLE

PREPARED OR REVISED BY: Bob Woychuk **DATE**: July 31, 1988

Churchill River above Red Head Rapids





Churchill River above Red Head Rapids

NAQUADAT NUMBER: 00MA06FD0002 **WSC REFERENCE NUMBER**: 06FD001

PROJECT REFERENCE NUMBER: 301 **SUBMITTER I.D.**: 0001

LOCATION: Latitude: 58° 07' 15" Longitude: 94° 37' 30"

During open water, samples are collected from a boat or aircraft. During winter conditions, a helicopter is used.

STATION ESTABLISHED: August, 1972

PERIOD OF RECORD: 1972 -

STATION TYPE: Quarterly, collected by Water Resources Branch. Major ions, nutrients, heavy metals.

EXPECTED FIELD OBSERVATIONS:

	pH	*Turbidity*	*Specific Conductance*
WINTER	*7 - 8.5*	*0.5 - 5*	*90 - 140*
SPRING	*7 - 8.5*	*1 - 15*	*90 - 140*
SUMMER	*7 - 8.5*	*1 - 15*	*80 - 120*
FALL	*7 - 8.5*	*1 - 10*	*80 - 120*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1971 -

SEDIMENT DATA: Not available

ISSUES:

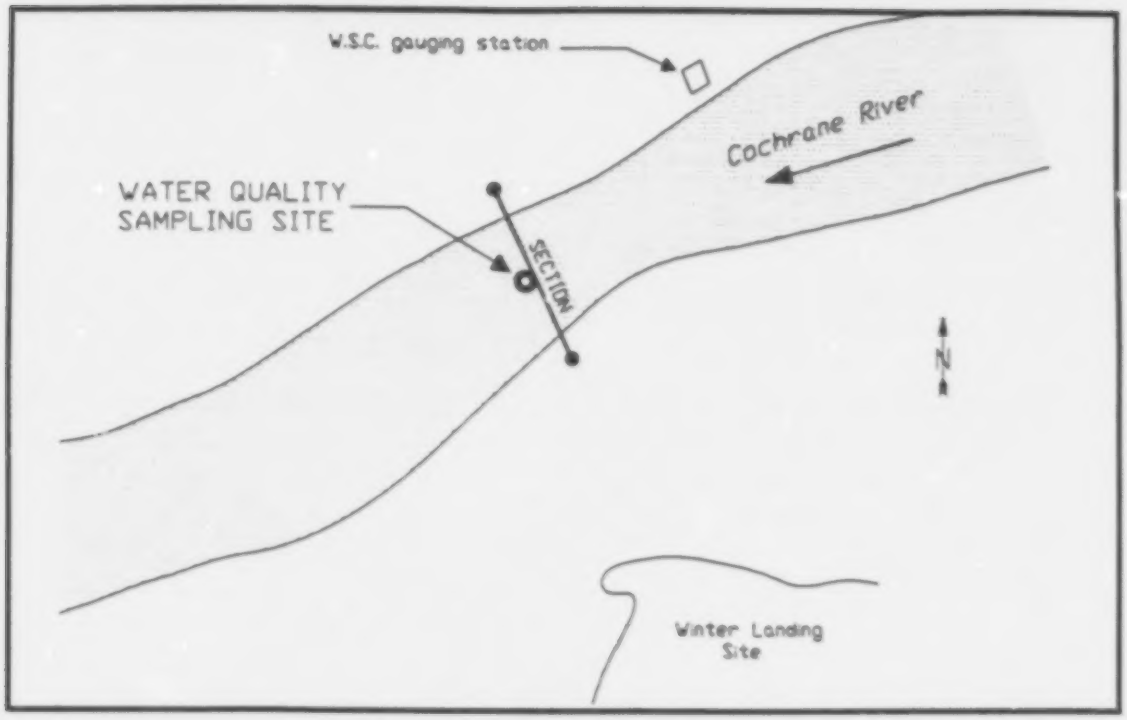
- The Churchill River Diversion may have significant adverse effects on the water quality of the Churchill River.

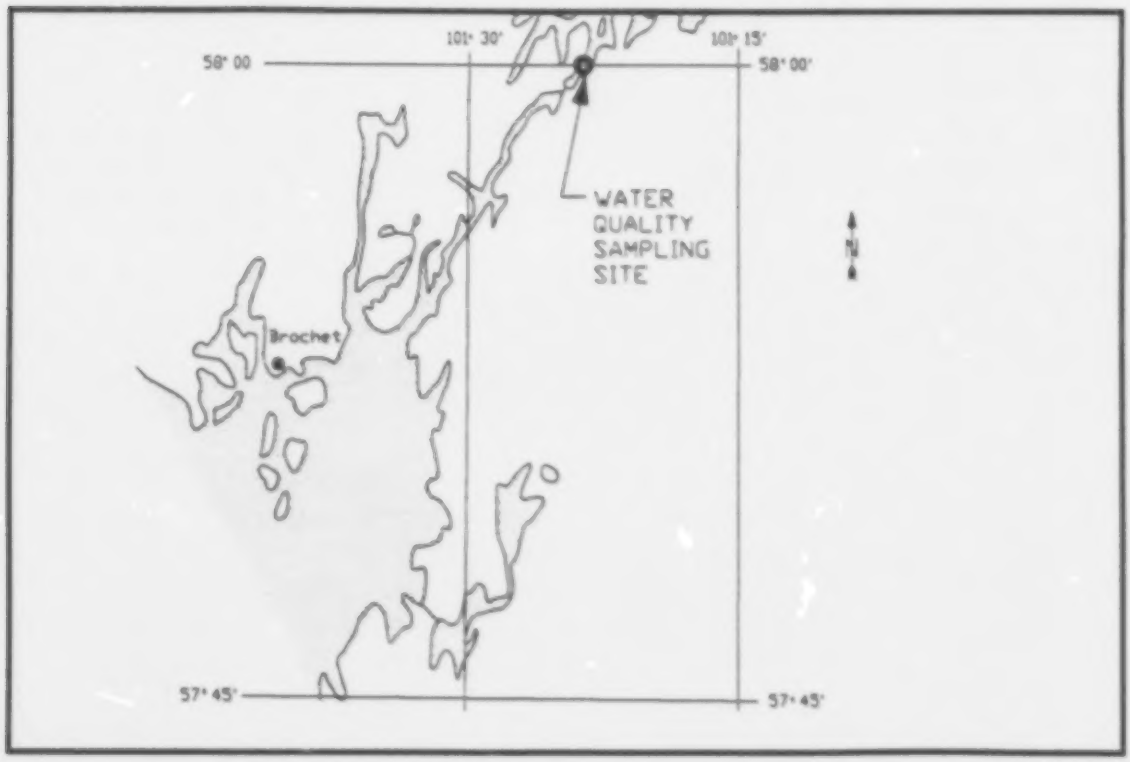
REPORTS AVAILABLE FOR THIS SITE:

- Lake Winnipeg, Churchill and Nelson River Study Board Reports (1975)
- An overview of phosphorus, nitrogen and organic carbon (1970-79)

PREPARED OR REVISED BY: Val Chacko **DATE**: March 31, 1987

Cochrane River near Brochet





Cochrane River near Brochet

NAQUADAT NUMBER: 00MA06DA0001 **WSC REFERENCE NUMBER**: 06DA002

PROJECT REFERENCE NUMBER: 313 **SUBMITTER I.D.**: 0001

LOCATION: Latitude: 58° 00' 00" Longitude: 101° 23' 45"

During open water, samples are collected from a boat or aircraft. During winter conditions, a helicopter is used.

STATION ESTABLISHED: August, 1972

PERIOD OF RECORD: 1972-

STATION TYPE: Quarterly, collected by Water Resources Branch. Major ions, nutrients, heavy metals.

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Specific Conductance*
WINTER		*6.5 - 7.5*	*0.2 - 5*	*25 - 90*
SPRING		*6.5 - 7.5*	*0.2 - 10*	*20 - 80*
SUMMER		*6.5 - 7.5*	*0.2 - 10*	*20 - 80*
FALL		*6.5 - 7.5*	*0.2 - 10*	*20 - 80*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1950, 1966 -

SEDIMENT DATA: Not available

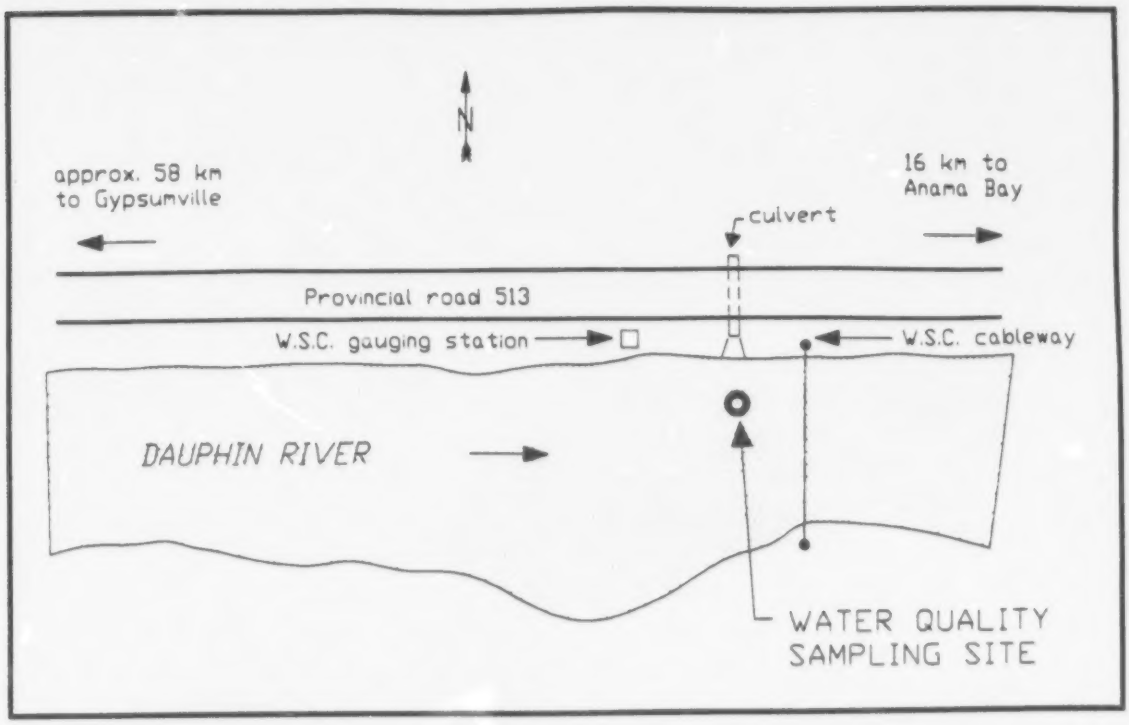
ISSUES:

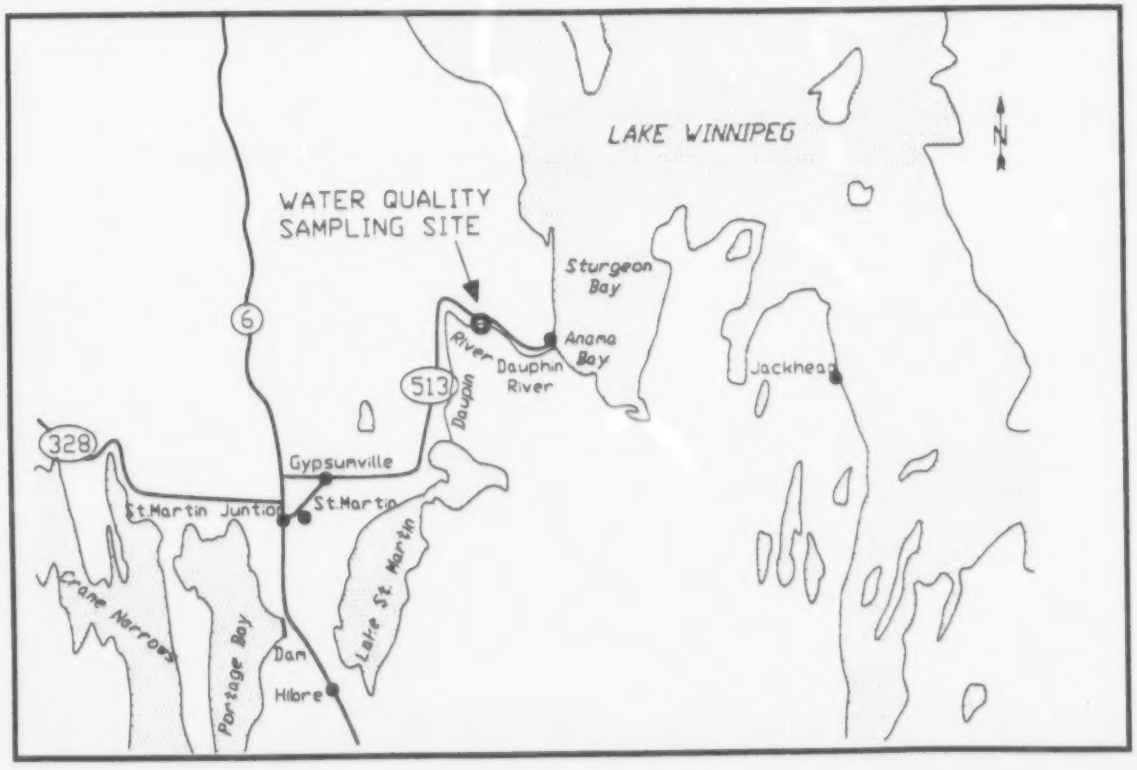
REPORTS AVAILABLE FOR THIS SITE:

- An overview of phosphorus, nitrogen and organic carbon (1970-79)

PREPARED OR REVISED BY: Val Chacko **DATE**: March 31, 1987

Dauphin River Near Dauphin River





Dauphin River near Dauphin River

NAQUADAT NUMBER: 00MA05LM0005 **WSC REFERENCE NUMBER**: ———

PROJECT REFERENCE NUMBER: 313 **SUBMITTER I.D.**: 0003

LOCATION: Latitude: 52° 00' 00" Longitude: 98° 19' 20"

Sampling location is 8 kilometres from the Band Office in Anama Bay (Dauphin River). A culvert crosses the road at the site. To reach the sampling site, follow the outwash of the culvert approximately 50 metres to the rivers edge. Sampling is done approximately 10 metres from shore (wading into stream and dipping).

STATION ESTABLISHED: April, 1990

PERIOD OF RECORD: 1990 -

STATION TYPE: Monthly, major ions, nutrients, heavy metals, biocides, continuous data.

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Specific Conductance*
WINTER	*7 - 14*	*7 - 9*	*1 - 5*	*500 - 4000*
SPRING	*10 - 14*	*7 - 9*	*1 - 25*	*500 - 2000*
SUMMER	*6 - 13*	*7 - 9*	*1 - 20*	*500 - 2700*
FALL	*9 - 13*	*7 - 9*	*1 - 10*	*500 - 2800*

WSC HYDROMETRIC STATION PERIOD OF RECORD:

SEDIMENT DATA: Not available

ISSUES:

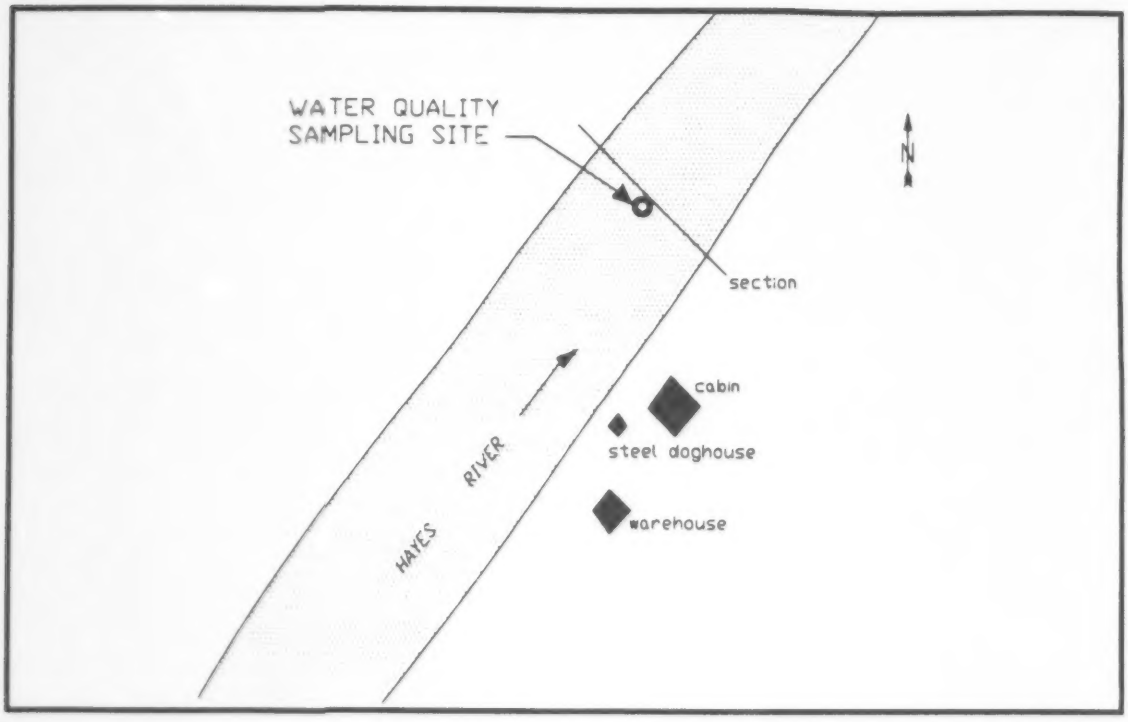
- Input into Lake Winnipeg

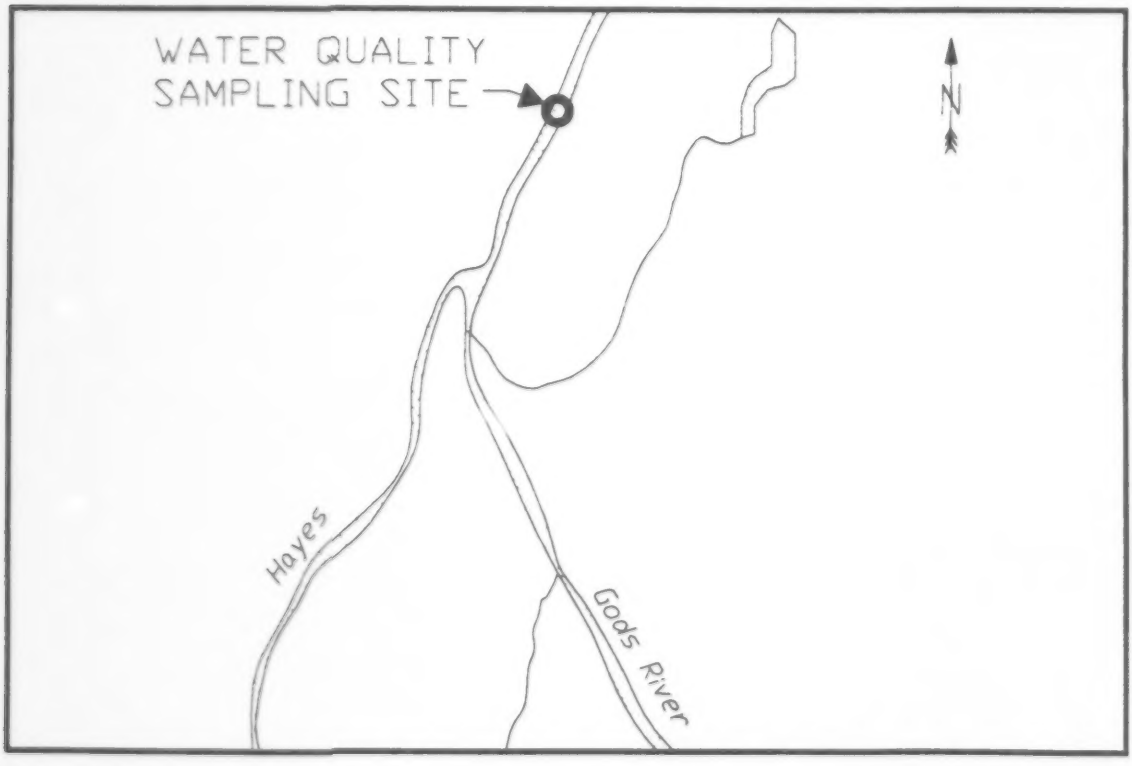
REPORTS AVAILABLE FOR THIS SITE:

- NAQUADAT - ORACLE

PREPARED OR REVISED BY: Bob Woychuk **DATE**: December 10, 1990

Hayes River below junction with Gods River





Hayes River below junction with Gods River

NAQUADAT NUMBER: 00MA04AB0001 **WSC REFERENCE NUMBER**: 04AB001

PROJECT REFERENCE NUMBER: 313 **SUBMITTER I.D.**: 0001

LOCATION: Latitude: 56° 25' 54" Longitude: 92° 47' 18"

During open water, samples are collected from a boat or aircraft. During winter conditions, a helicopter is used.

STATION ESTABLISHED: June, 1974

PERIOD OF RECORD: 1974-

STATION TYPE: Quarterly, collected by Water Resources Branch. Major ions, nutrients, heavy metals, biocides.

EXPECTED FIELD OBSERVATIONS:

	pH	*Turbidity*	*Specific Conductance*
WINTER	*7 - 8.5*	*0.5 - 5*	*90 - 200*
SPRING	*7 - 8.5*	*1 - 15*	*100 - 150*
SUMMER	*7 - 8.5*	*1 - 15*	*100 - 150*
FALL	*7 - 8.5*	*1 - 10*	*100 - 150*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1972 -

SEDIMENT DATA: Not available

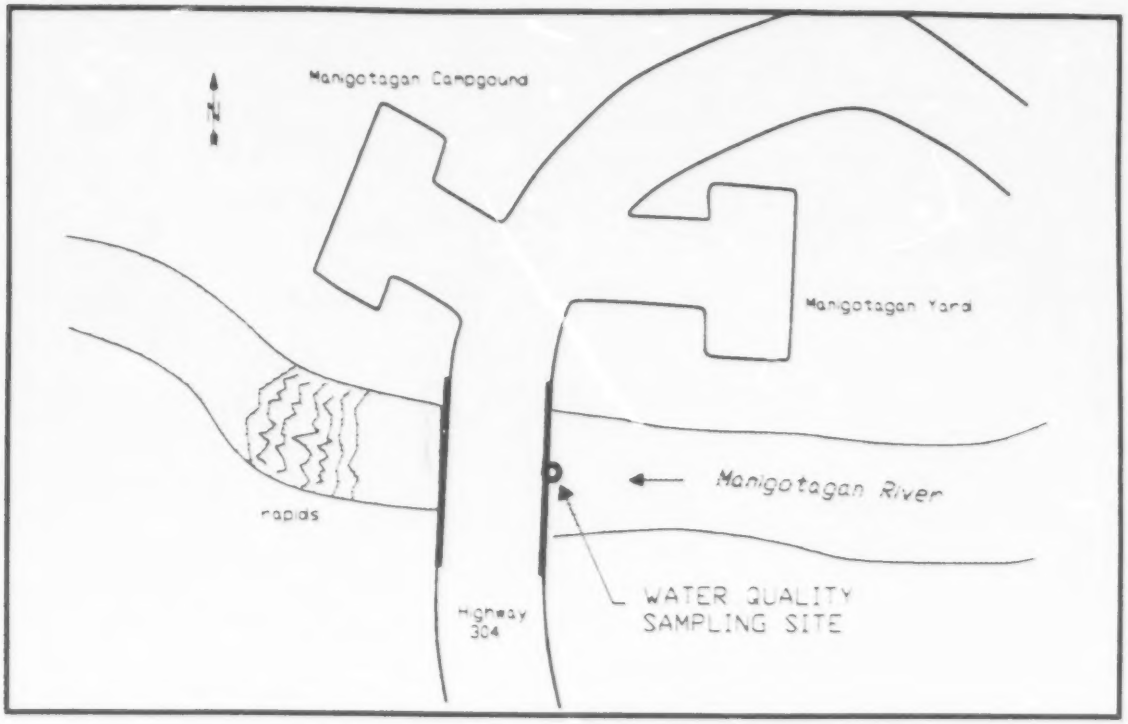
ISSUES:

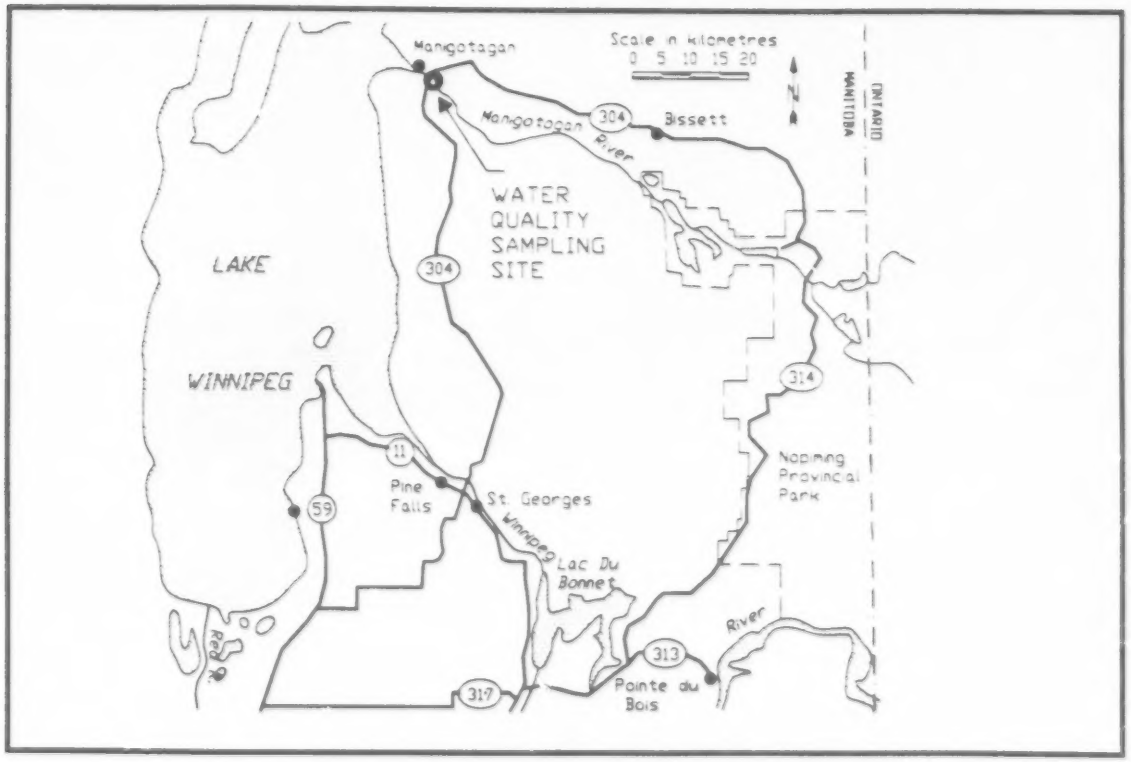
REPORTS AVAILABLE FOR THIS SITE:

- An overview of phosphorus, nitrogen and organic carbon (1970-79)

PREPARED OR REVISED BY: Val Chacko **DATE**: March 31, 1987

Manigotagan River at Highway 304 Bridge





Manigotagan River at Highway 304 bridge

NAQUADAT NUMBER: 00MA05RA0004 **WSC REFERENCE NUMBER**: 05RA001

PROJECT REFERENCE NUMBER: 304 **SUBMITTER I.D.**: 0003

LOCATION: Latitude: 51° 06' 00" Longitude: 96° 17' 00"

Samples are collected from bridge on Highway #304. Water is open through-out the year.

STATION ESTABLISHED: July, 1969

PERIOD OF RECORD: 1969 -

STATION TYPE: Monthly, physicals, major ions, nutrients, heavy metals. A precambrian site is maintained in the south to detect long-term water quality trends.

EXPECTED FIELD OBSERVATIONS:

	DO	pH	Turbidity	Spec. Cond.	Total Coliform	Fecal Colifrom	Fecal Strep.
WINTER	10-13	7 - 9	2 - 10	60 - 250	<2 - 100	<2 - 10	<2 - 50
SPRING	12-14	7 - 9	2 - 10	45 - 200	<2 - 100	<2 - 10	<2 - 50
SUMMER	8-12	7 - 9	2 - 10	45 - 150	<2 - 100	<2 - 10	<2 - 50
FALL	10-13	7 - 9	2 - 10	45 - 150	<2 - 100	<2 - 10	<2 - 50

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1913 - 17, 1919 - 23, 1960 -

SEDIMENT DATA: Not available

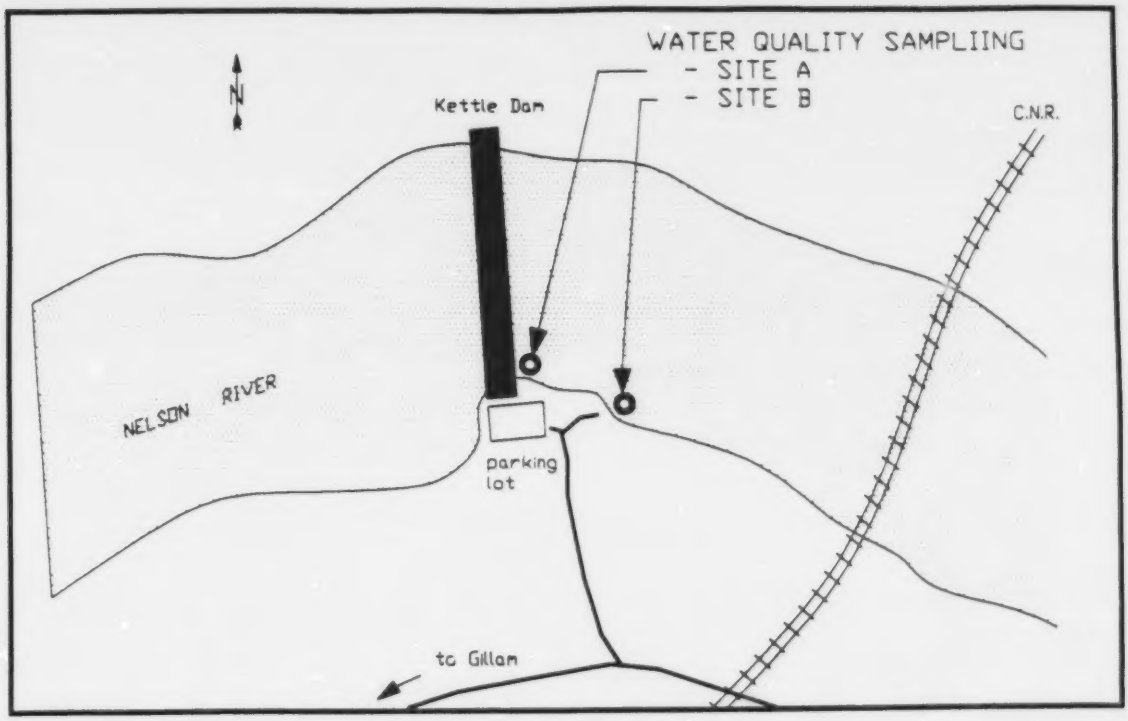
ISSUES:

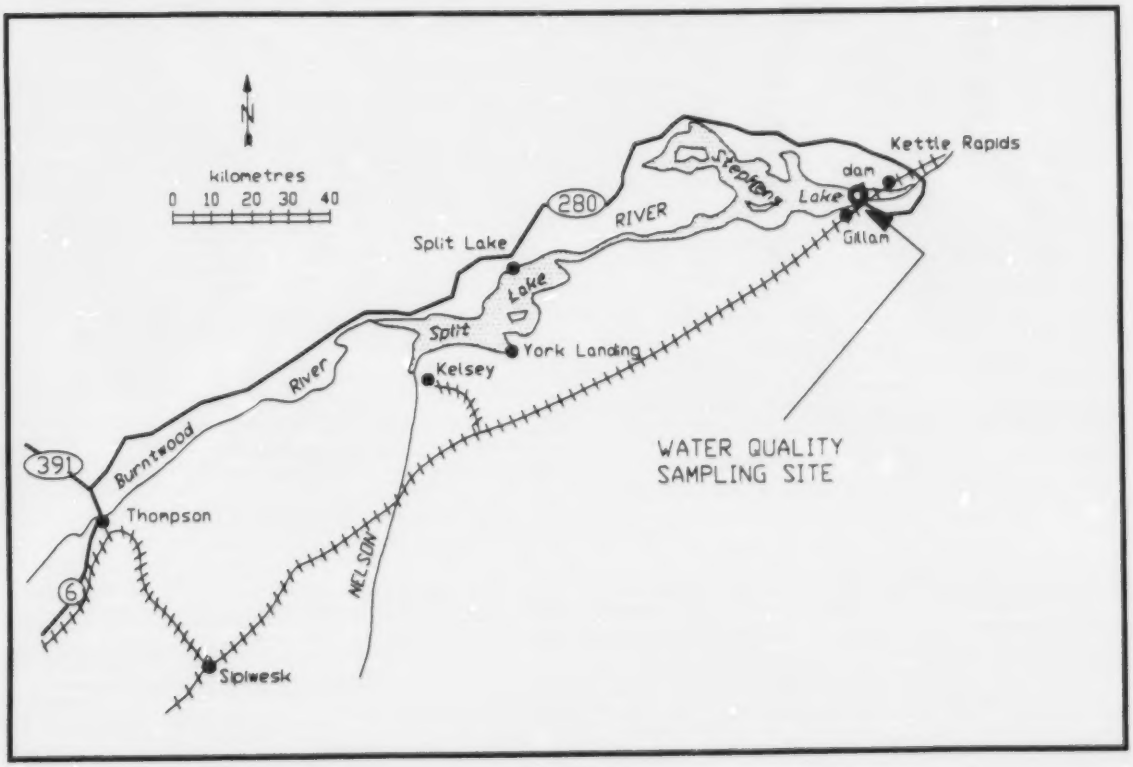
REPORTS AVAILABLE FOR THIS SITE:

- An overview of phosphorus, nitrogen and organic carbon (1970-79)

PREPARED OR REVISED BY: Val Chacko **DATE**: March 31, 1987

Nelson River below Kettle Generating Station





Nelson River below Kettle Generating Station

NAQUADAT NUMBER: 00MA05UF0002 **WSC REFERENCE NUMBER**: 05UF006

PROJECT REFERENCE NUMBER: 301 **SUBMITTER I.D.**: 0001

LOCATION: Latitude: 56° 23' 34" Longitude: 94° 34' 53"

Accessible by road via Provincial Road 280 toward Gillam, then a short turnoff on the Kettle Dam Road approx. 13 kilometres east of Gillam. Samples collected either from 5 metres or 150 metres below dam on the right side depending on ice and safety conditions.

Site A - at base of dam on right bank approx 5 metres below the outflow. This site has open water in winter. The banks are steep with many loose boulders.

Site B - approximately 150 metres below dam on right bank at the end of the boat launch trail. Requires ice auger to sample through ice in winter.

STATION ESTABLISHED: JULY, 1972

PERIOD OF RECORD: July 1972 - March 1978; April 1987 -

STATION TYPE: Quarterly, collected by WSC. Physical parameters, major ions, nutrients, heavy metals (GEMS).

Parametric coverage of the site should be expanded based on the NFA water quality study recommendation.

EXPECTED FIELD OBSERVATIONS:

	pH	*Turbidity*	*Specific Conductance*
WINTER	*7 - 8.5*	*1 - 10*	*100 - 300*
SPRING	*7 - 8.5*	*3 - 25*	*50 - 250*
SUMMER	*7 - 8.5*	*3 - 15*	*50 - 200*
FALL	*7 - 8.5*	*3 - 15*	*50 - 200*

ISSUES:

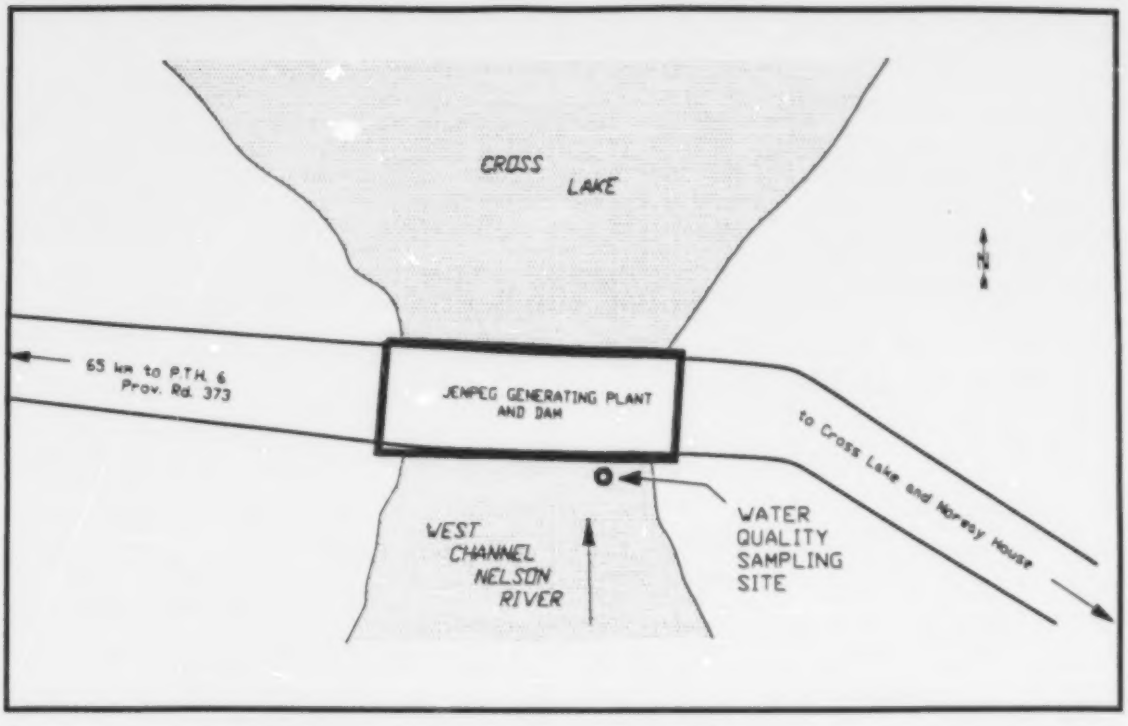
- Major hydro-electric power developments taking place.
- Data from this site required for the NFA water quality study.
- Site had been reinstated in 1987 after discontinuing the Nelson above Weir River site. The latter site had been discontinued because of the difficulties in obtaining a representative sample.

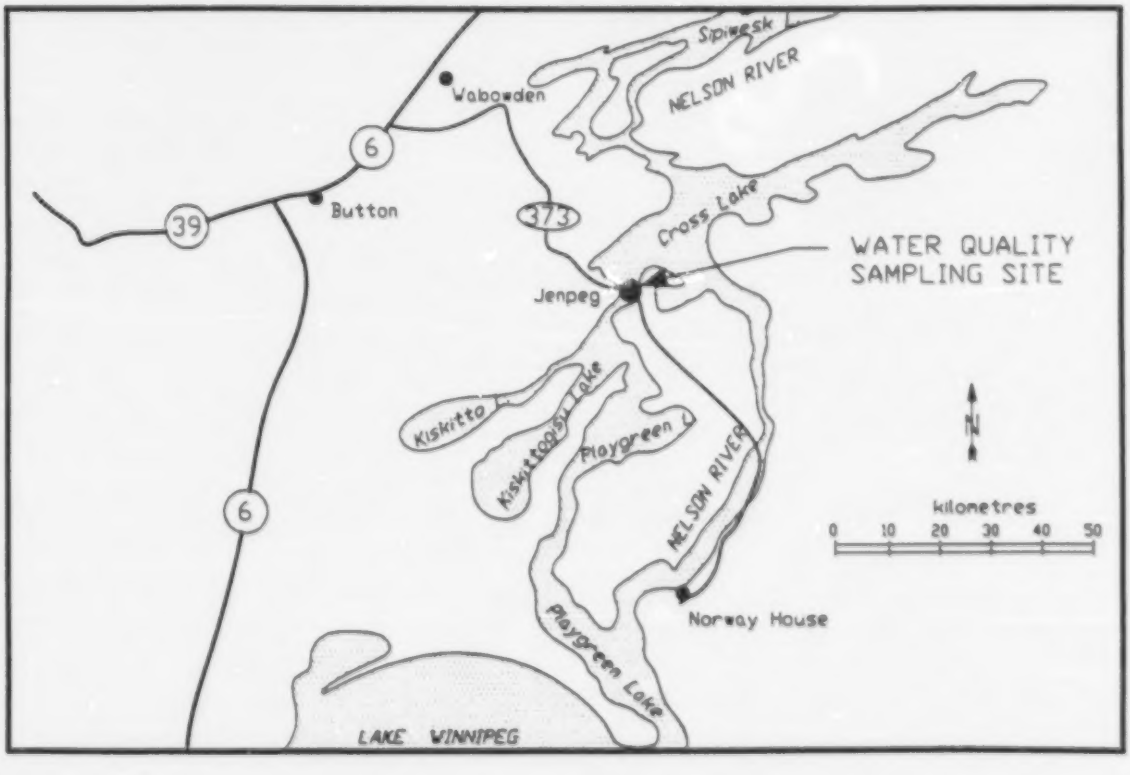
REPORTS AVAILABLE FOR THIS SITE:

- Lake Winnipeg, Churchill and Nelson R. Study Board Reports (1975)

PREPARED OR REVISED BY: V.T. Chacko **DATE**: March 31, 1987

Nelson River at Jenpeg





Nelson River Jenpeg Dam

NAQUADAT NUMBER: 00MA05UD0004 **WSC REFERENCE NUMBER**: ------

PROJECT REFERENCE NUMBER: 313 **SUBMITTER I.D.**: 0003

LOCATION: Latitude: --- ° --' -- " Longitude: --- ° --' --"

Winter and summer, the samples are taken on the upstream side of the dam (on the roadway going over the dam), at open water.

STATION ESTABLISHED: 1989

PERIOD OF RECORD: 1989 -

STATION TYPE: Quarterly, sampling for major ions, nutrients, heavy metals.

EXPECTED FIELD OBSERVATIONS:

	Dissolve Oxygen	*pH*	*Turbidity*	*Specific Conductance*
WINTER	*10 - 14*	*7.5 - 8.2*	*0 - 50*	*100 - 500*
SPRING	*10 - 14*	*7.5 - 8.2*	*10 - 100*	*100 - 400*
SUMMER	*7 - 12*	*7.5 - 8.2*	*0 - 50*	*200 - 500*
FALL	*10 - 14*	*7.5 - 8.2*	*10 - 50*	*200 - 500*

ISSUES:

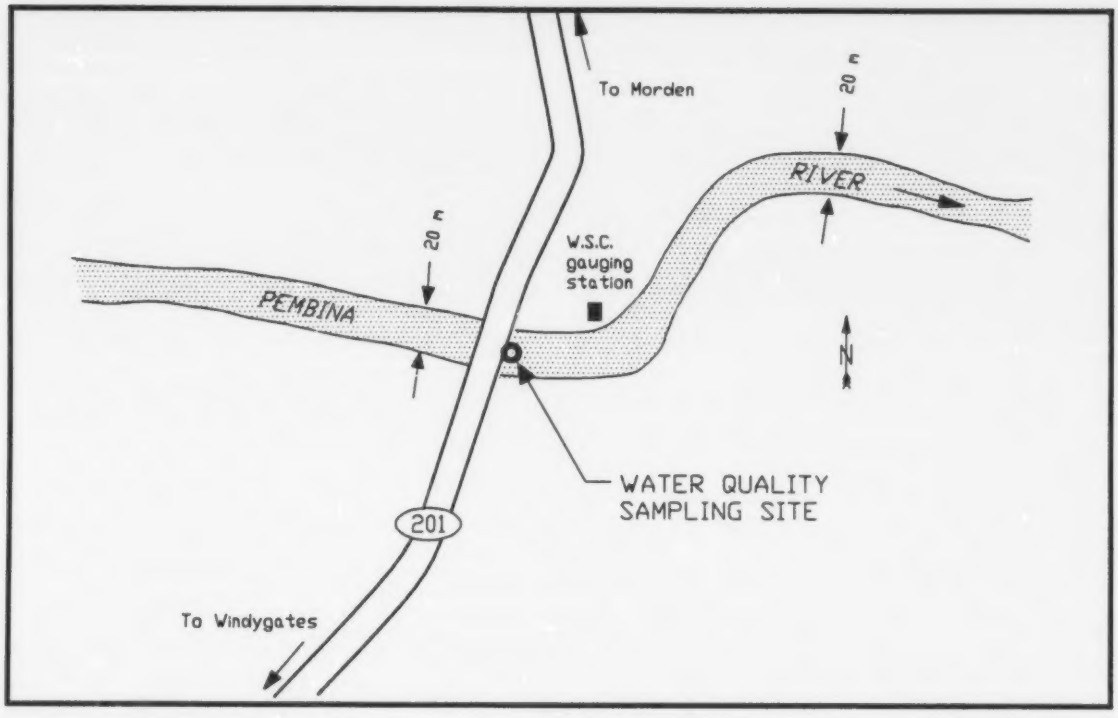
- Impact study as a result of impoundment.

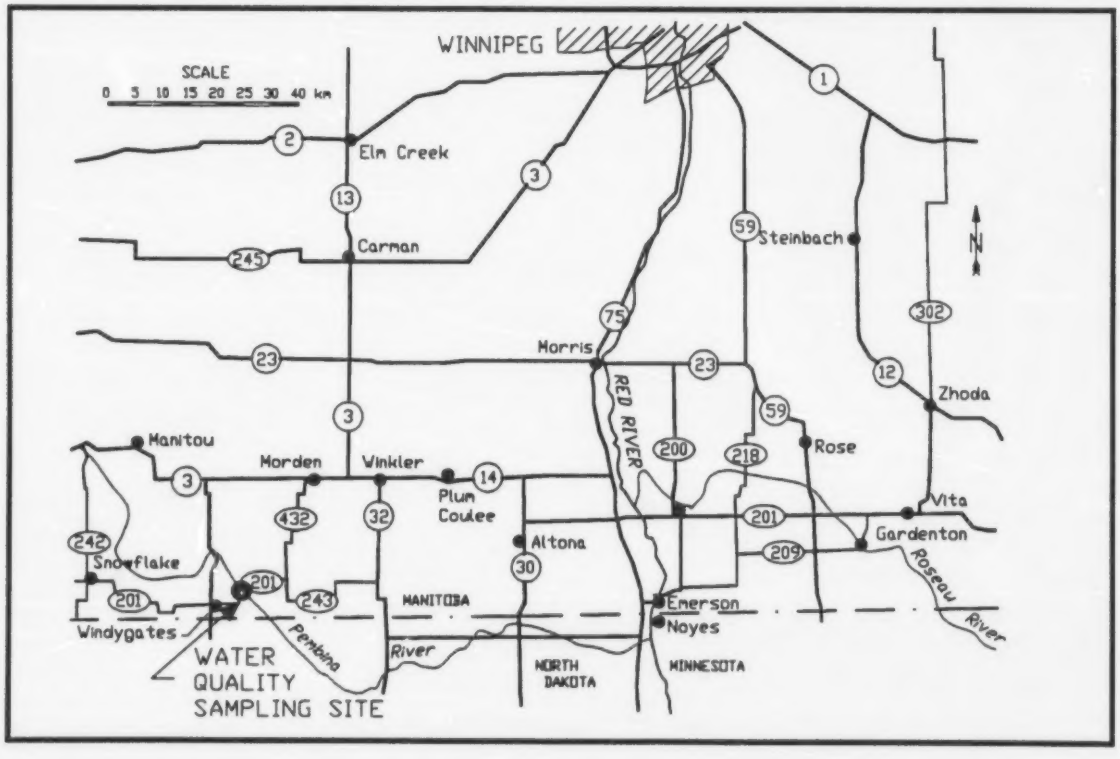
REPORTS AVAILABLE FOR THIS SITE:

- Lower Nelson Overview Study - 1981 Manitoba Hydro.
- Lake Winnipeg, Churchill and Nelson Rivers Study Board 1971 - 75 (Canada-Manitoba).

PREPARED OR REVISED BY: Bob Woychuk **DATE**: December 18, 1990.

Pembina River at Windygate





Pembina River at Windygates

NAQUADAT NUMBER: 00MA05OB0001 **WSC REFERENCE NUMBER**: 05OB007

PROJECT REFERENCE NUMBER: 304 **SUBMITTER I.D.**: 0003

LOCATION: Latitude: 49° 02' 00" Longitude: 98° 16' 30"

Samples are collected from the bridge on Highway #201. The site is located in a deep valley and roads may be slippery during winter periods. Upstream of the bridge is the best location to collect forage fish.

STATION ESTABLISHED: May, 1960

PERIOD OF RECORD: 1960 -

STATION TYPE: Monthly, physicals, major ions, nutrients, heavy metals, biocides

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Spec. Cond.*	*Total Coliform*	*Fecal Coliform*	*Fecal Strep.*
WINTER	*0 - 10*	*7 - 9*	*1 - 50*	*700 - 1300*	*< 2 - 200*	*< 2 - 100*	*< 2 - 150*
SPRING	*2 - 12*	*7 - 9*	*5 - 400*	*200 - 1000*	*< 2 - 500*	*< 2 - 150*	*< 2 - 200*
SUMMER	*7 - 12*	*7 - 10*	*1 - 100*	*200 - 900*	*< 2 - 200*	*< 2 - 100*	*< 2 - 150*
FALL	*7 - 13*	*7 - 10*	*1 - 100*	*500 - 1200*	*< 2 - 200*	*< 2 - 100*	*< 2 - 150*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1962

SEDIMENT DATA: 1962

ISSUES:

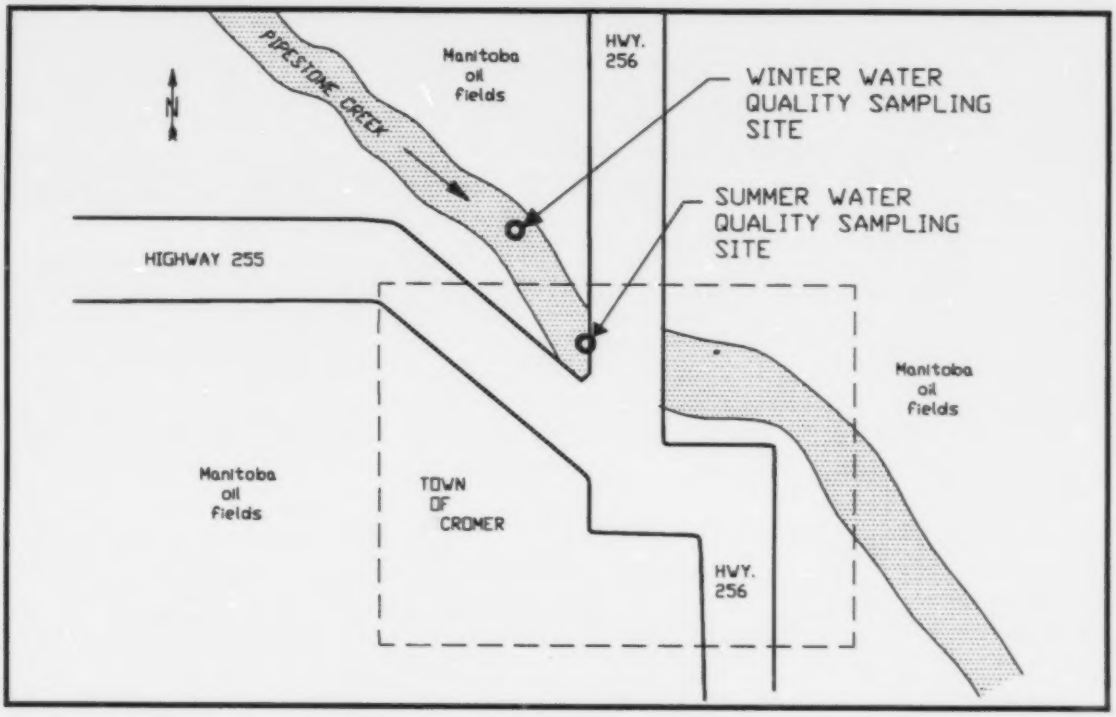
- Municipal waste and biocides are major concerns.
- PCB's have been detected in the past.

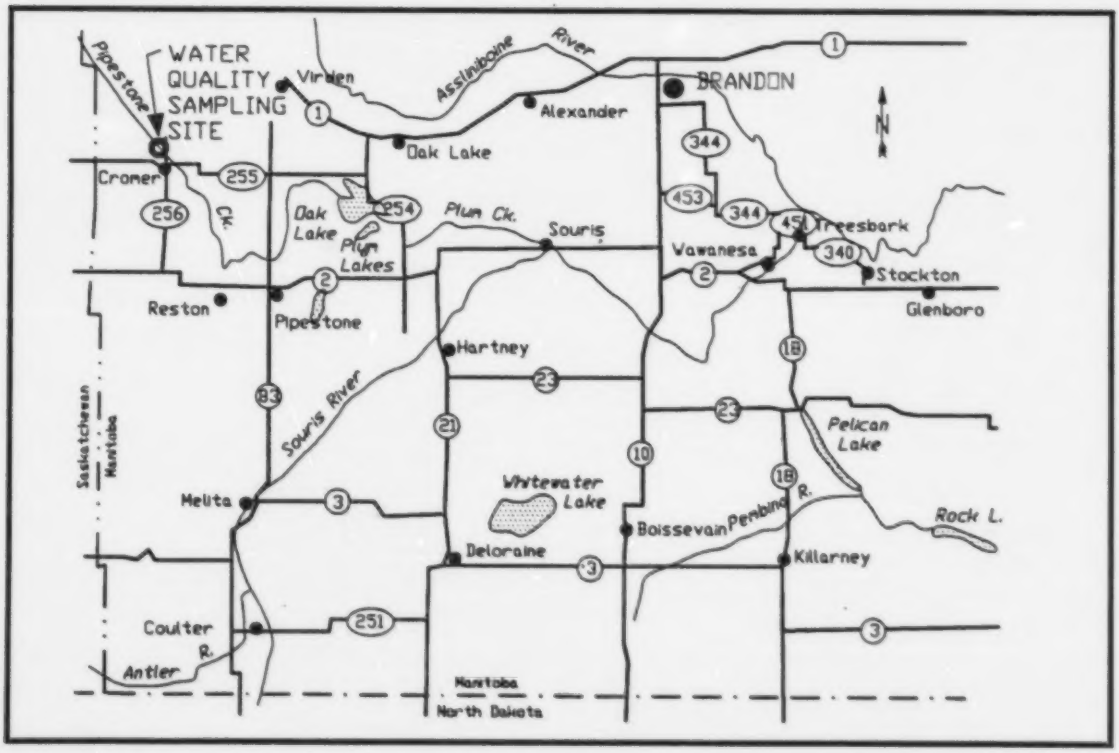
REPORTS AVAILABLE FOR THIS SITE:

- An overview of phosphorus, nitrogen and organic carbon (1970-79)
- Multimedia analyses for various metals and biocides

PREPARED OR REVISED BY: Val Chacko **DATE**: March 31, 1987

Pipestone Creek 0.4 kilometres from Cromer on Highway #255





Pipestone Creek 0.4km from Cromer on Highway #255

NAQUADAT NUMBER: 00MA05NG0013 **WSC REFERENCE NUMBER**: 05NG024

PROJECT REFERENCE NUMBER: 304 **SUBMITTER I.D.**: 0003

LOCATION: Latitude: 49° 44' 18" Longitude: 101° 14' 09"

During open water, samples are collected from the bridge on Highway #256. During the winter, samples are collected 35 metres upstream, near the dam. No drilling is required.

STATION ESTABLISHED: August, 1974

PERIOD OF RECORD: 1974 -

STATION TYPE: Monthly, physicals, major ions, nutrients, heavy metal, biocides.

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Spec. Cond.*	*Total Colifrom*	*Fecal Coliform*	*Fecal Strep.*
WINTER	*2 - 9*	*7 - 9*	*2 - 30*	*400 - 1200*	*< 2 - 200*	*< 2 - 100*	*< 2 - 150*
SPRING	*3 - 11*	*7 - 8*	*15 - 50*	*200 - 800*	*< 2 - 200*	*< 2 - 100*	*< 2 - 150*
SUMMER	*5 - 10*	*7 - 9*	*15 - 50*	*200 - 800*	*< 2 - 200*	*< 2 - 100*	*< 2 - 150*
FALL	*5 - 12*	*7 - 9*	*10 - 40*	*200 - 800*	*< 2 - 200*	*< 2 - 100*	*< 2 - 150*

ISSUES:

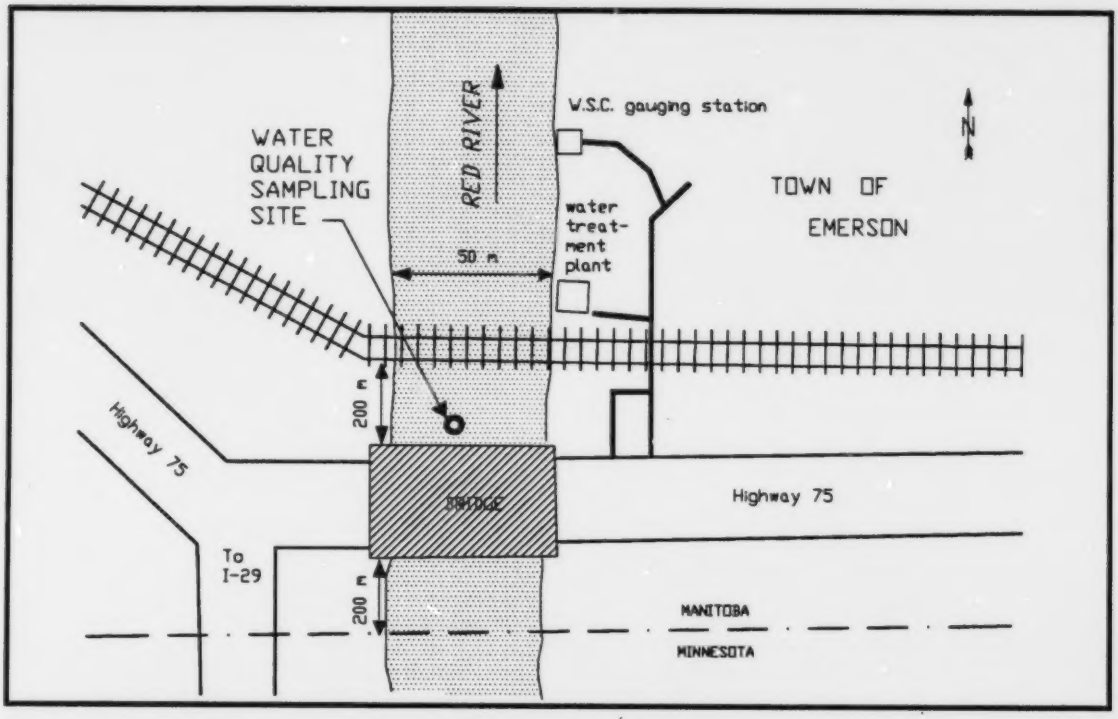
- Major issues are nutrients and biocides. Pipestone Creek discharges into Oak Lake which is at an eutrophic state. There is a considerable amount of pressure from cottage owners to limit or stop the nutrient discharge into the lake.

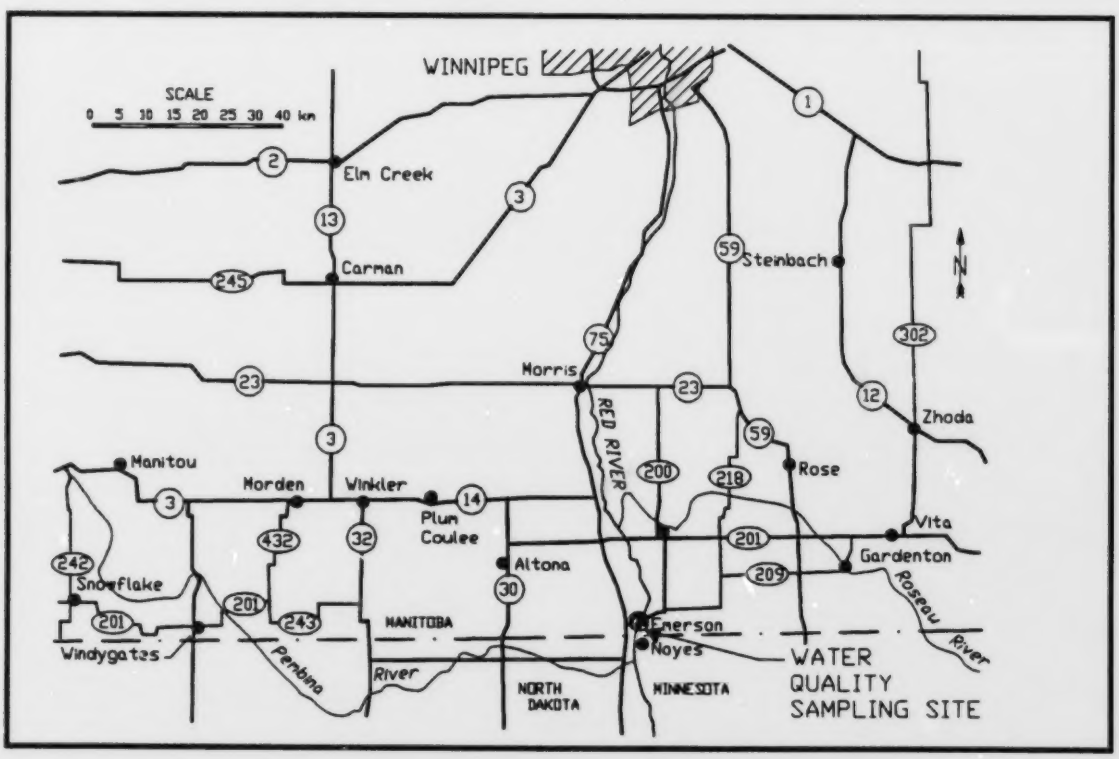
REPORTS AVAILABLE FOR THIS SITE:

- An overview of phosphorus, nitrogen and organic carbon (1970-79)

PREPARED OR REVISED BY: Val Chacko **DATE**: March 31, 1987

Red River at Emerson





Red River at Emerson

NAQUADAT NUMBER: 00MA05OC0001 **WSC REFERENCE NUMBER**: 05OC001

PROJECT REFERENCE NUMBER: 306 **SUBMITTER I.D.**: 0003

LOCATION: Latitude: 49° 00' 30" Longitude: 97° 12' 40"

Samples collected from bridge on HWY 75. During the winter, samples collected downstream near the railway bridge (water usually open). This downstream location is the best location to collect forage fish.

STATION ESTABLISHED: May, 1960

PERIOD OF RECORD: 1960 -

STATION TYPE: Continuous monitoring of DO, pH, conductivity, chlorides and temperature. Monthly monitoring, physicals, major ions, nutrients, heavy metals, biocides, radionuclides, (GEMS).

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Spec. Cond.*	*Total Coliform*	*Fecal Coliform*	*Fecal Strep.*
WINTER	*10 - 14*	*7 - 8.5*	*1 - 50*	*300 - 1500*	*< 2 - 200*	*< 2 - 100*	*< 2 - 150*
SPRING	*7 - 11*	*7 - 8.5*	*1 - 800*	*300 - 1200*	*< 2 - 500*	*< 2 - 150*	*< 2 - 200*
SUMMER	*5 - 9*	*7 - 8.5*	*1 - 1000*	*300 - 1200*	*< 2 - 200*	*< 2 - 100*	*< 2 - 150*
FALL	*7 - 13*	*7 - 9.0*	*2 - 500*	*200 - 1500*	*< 2 - 200*	*< 2 - 100*	*< 2 - 150*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1912 -

SEDIMENT DATA: 1956, 1961, 1978 -

ISSUES:

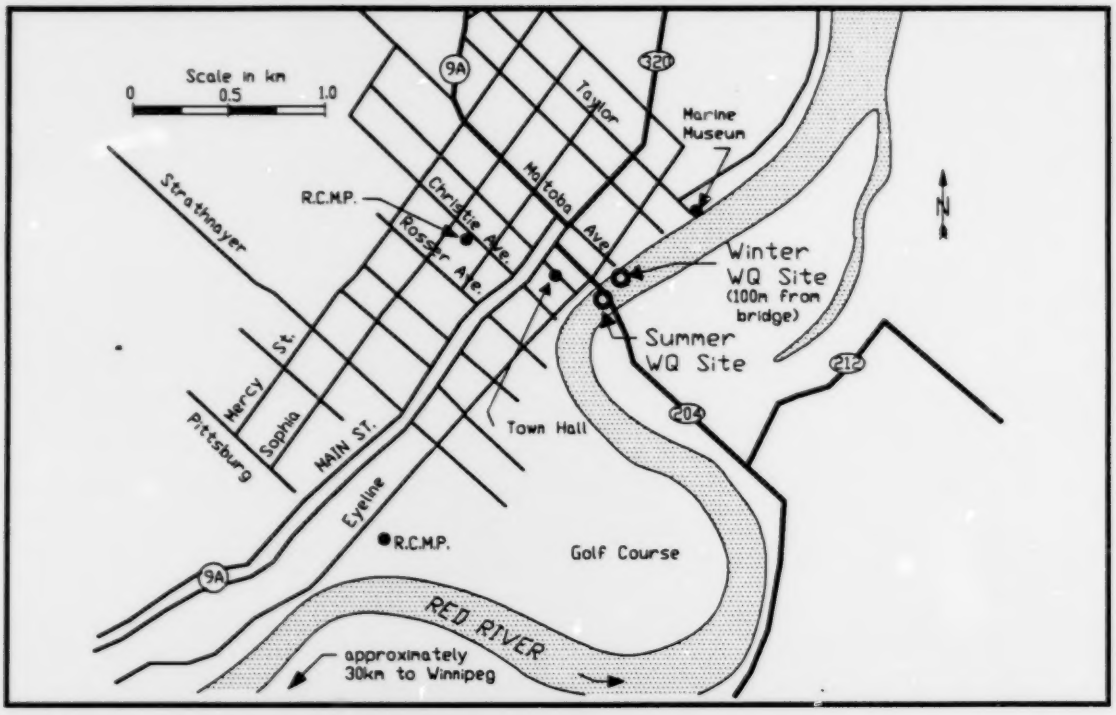
- Revised Garrison scheme now under active consideration. This may have an adverse effect on the Red River quality.
- Municipal & industrial spills of major concern. Recently frequency of industrial spills (sugar beet) has decreased.
- Low DO, nutrients, herbicides, cyanides, chlorides, heavy metals, etc. are of concern in the Red River.
- The originally proposed nuclear waste repositories in this basin are no longer under active consideration.

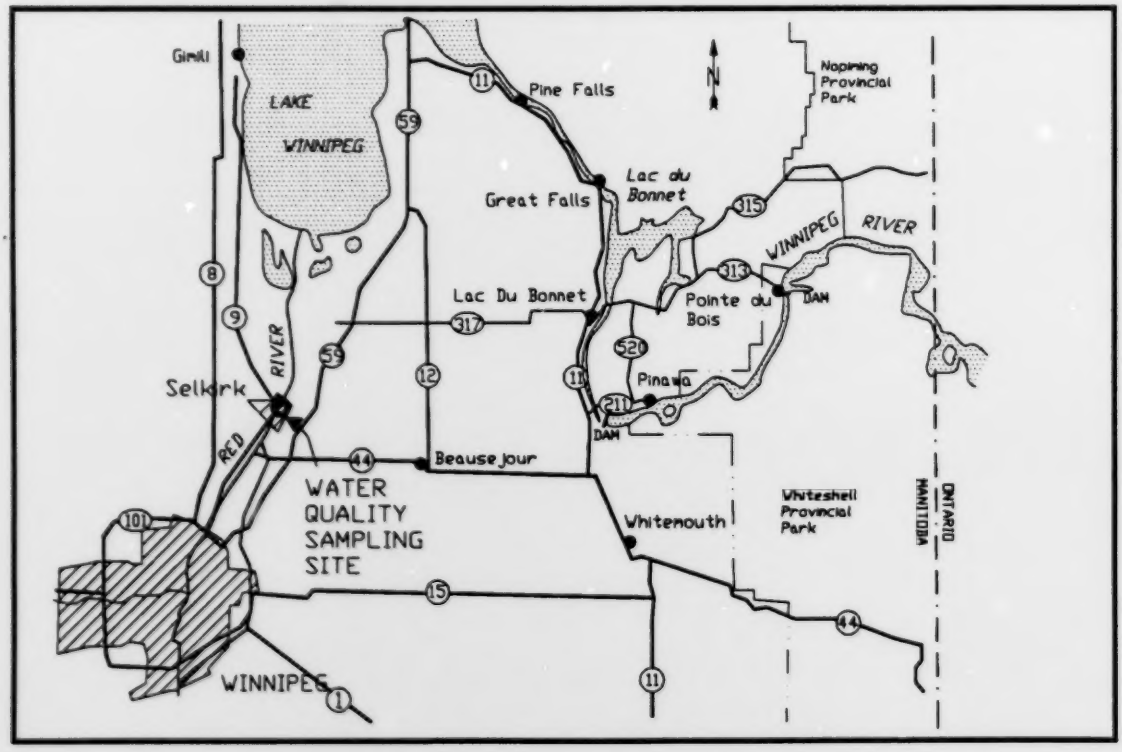
REPORTS AVAILABLE FOR THIS SITE:

- Reports on nutrients, 2,4,-D, sugar beet plant waste spills, Red River Pollution Annual Reports, and multimedia analyses for various metals and biocides, etc.
- Report on 1971- 84 automated water quality monitoring at Emerson
- Water quality classification by the province of Manitoba.
- Historical total and fecal coliform density report (1977 - 1989).
- Biotoxicity Study report.

PREPARED OR REVISED BY: Val Chacko **DATE**: March 31, 1987

Red River at Selkirk





Red River at Selkirk

NAQUADAT NUMBER: 00MA05OJ0001 **WSC REFERENCE NUMBER**: 05OJ001

PROJECT REFERENCE NUMBER: 313 **SUBMITTER I.D.**: 0003

LOCATION: Latitude: 50° 8' 30" Longitude: 96° 52' 6"

During open water samples are collected on upstream side of bridge on Highway 204 between East Selkirk and Selkirk on the Red River. During winter conditions sampling is done downstream of bridge and from west bank.

STATION ESTABLISHED: May 14, 1960.

PERIOD OF RECORD: 1960 - 1978, 1989 -

STATION TYPE: Monthly major ions, nutrients, heavy metals, biocides, continuous nutrient data.

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Specific Conductance*
WINTER	*7 - 13*	*7 - 9*	*0.5 - 10*	*400 - 800*
SPRING	*9 - 13*	*7 - 9*	*50 - 500*	*300 - 600*
SUMMER	*5 - 10*	*7 - 10*	*5 - 30*	*300 - 1000*
FALL	*9 - 13*	*7 - 13*	*5 - 50*	*300 - 1000*

WSC HYDROMETRIC STATION PERIOD OF RECORD:

SEDIMENT DATA:

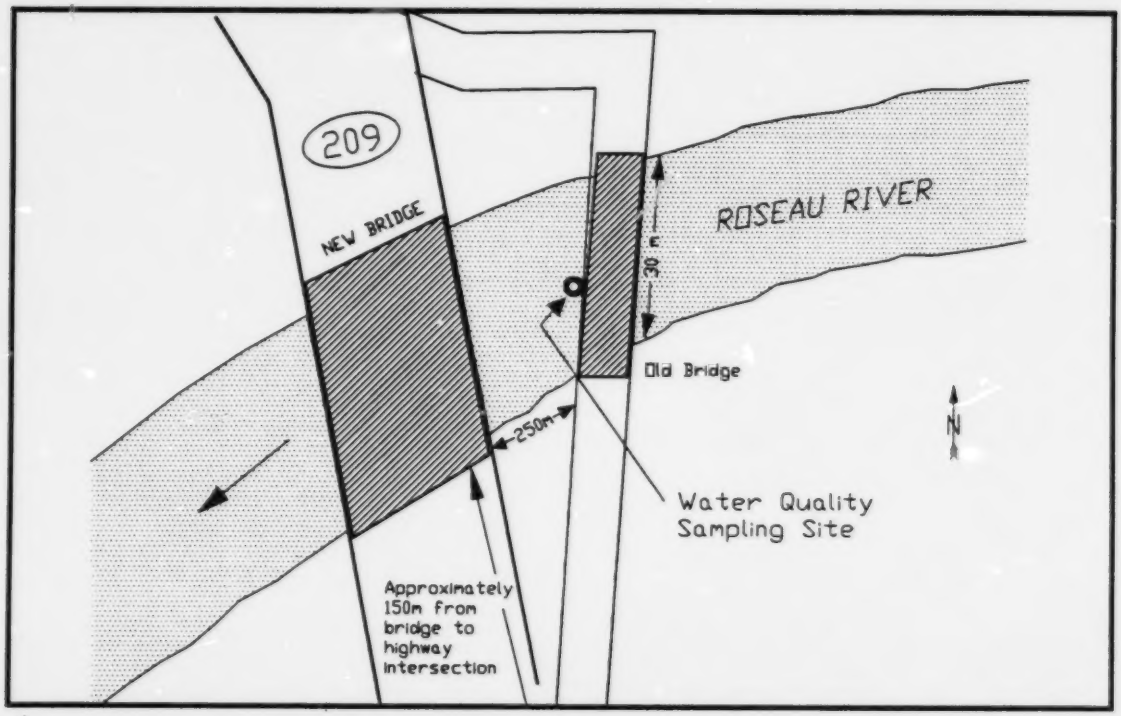
ISSUES:

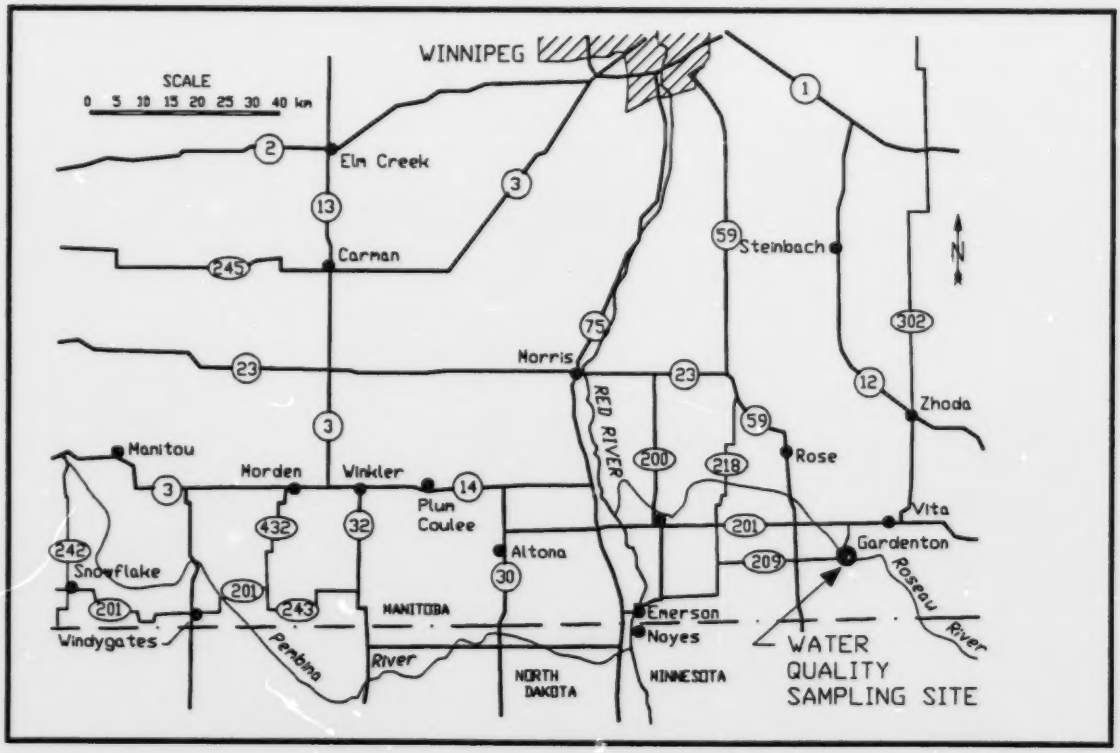
REPORTS AVAILABLE FOR THIS SITE:

- Water quality classification by the Province of Manitoba.
- Reports on 2,4-D, and multimedia analyses for various metals and biocides.

PREPARED BY: Bob Woychuk **DATE**: December 10, 1990

Roseau River at Gardenton





Roseau River at Gardenton

NAQUADAT NUMBER: 00MA05OD0001 **WSC REFERENCE NUMBER**: 05OD004

PROJECT REFERENCE NUMBER: 304 **SUBMITTER I.D.**: 0003

LOCATION: Latitude: 49° 05' 16" Longitude: 96° 41' 15"

Samples are collected from old bridge on Highway #209. During the winter, samples are collected down stream of the bridge.

STATION ESTABLISHED: August, 1960

PERIOD OF RECORD: 1960 -

STATION TYPE: Monthly, physicals, major ions, nutrients, heavy metals, biocides

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Spec. Cond.*	*Total Coliform*	*Fecal Coliform*	*Fecal Strep.*
WINTER	*1 - 9*	*7 - 9*	*0.5 - 50*	*400 - 1200*	*< 2 - 200*	*< 2 - 100*	*< 2 - 150*
SPRING	*2 - 10*	*7 - 9*	*1 - 50*	*200 - 1000*	*< 2 - 500*	*< 2 - 150*	*< 2 - 200*
SUMMER	*5 - 11*	*7 - 9*	*1 - 50*	*250 - 900*	*< 2 - 200*	*< 2 - 100*	*< 2 - 150*
FALL	*7 - 14*	*7 - 9*	*1 - 50*	*250 - 900*	*< 2 - 200*	*< 2 - 100*	*< 2 - 150*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1915 - 23, 1926 - 31, 1962 -

SEDIMENT DATA: 1972 -

ISSUES:

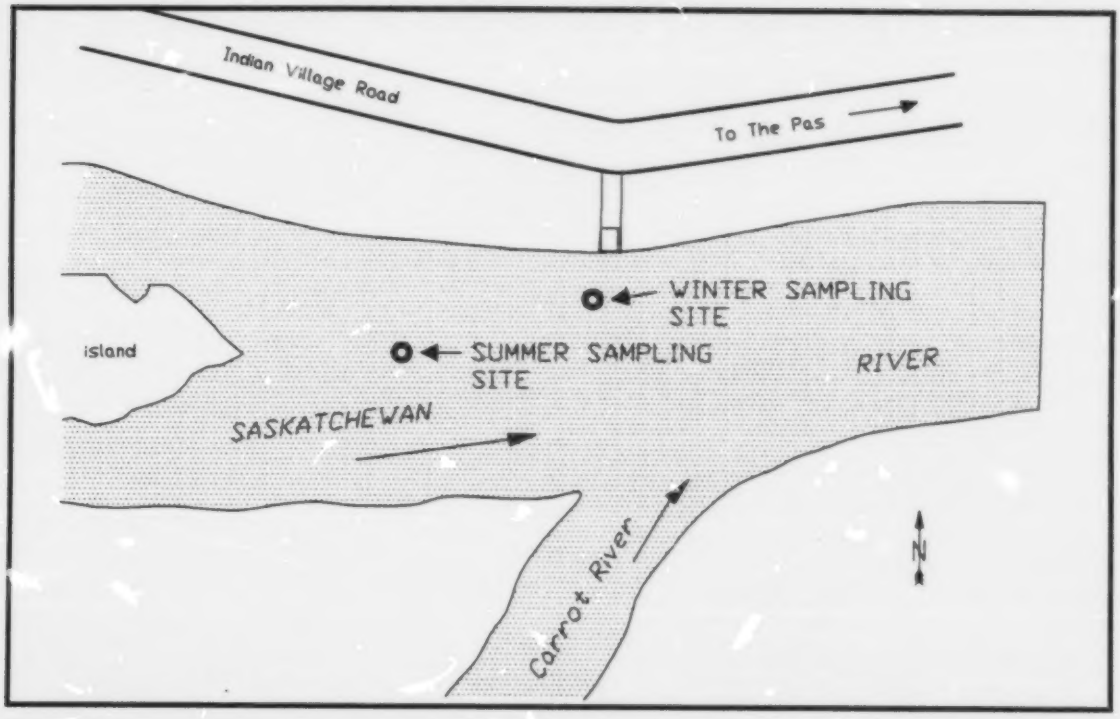
- Municipal waste and proposed channel improvements in Minnesota are causes of concern.
- Herbicide Silvex was detected on several occasions during the late seventies and early eighties.
- The originally proposed nuclear waste repositories in this basin are no longer under active consideration.

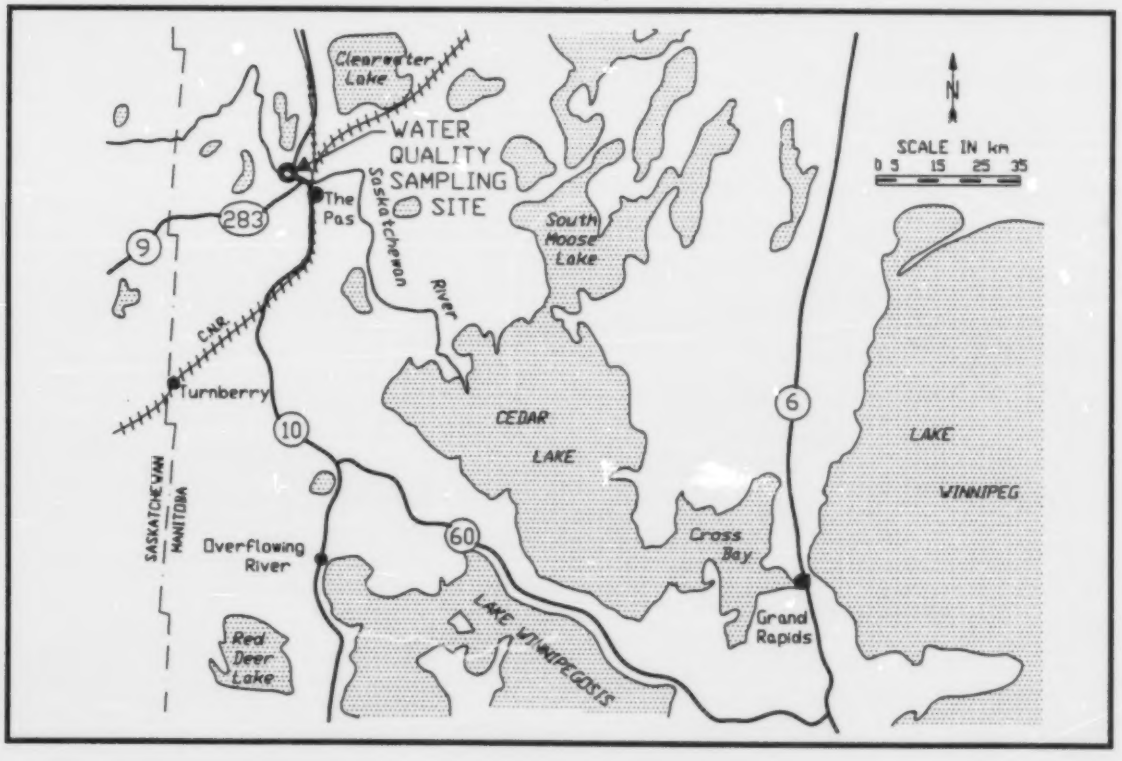
REPORTS AVAILABLE FOR THIS SITE:

- Report to the IJC (1975) by the International Roseau River Engineering Board.
- Preliminary Impact Assessment of the proposed water management plans on the Roseau River Reserve (1976).
- Report on multimedia analyses for various metals and biocides.
- Overview of phosphorus, nitrogen and organic carbon (1970 - 79).

PREPARED BY: Val Chacko **DATE**: March 31, 1987

Saskatchewan River above Carrot River





Saskatchewan River above Carrot River

NAQUADAT NUMBER: 00MA05KH0001 **WSC REFERENCE NUMBER**: —-

PROJECT REFERENCE NUMBER: 315 **SUBMITTER I.D.**: 0462

LOCATION: Latitude: 53° 50' 30"' Longitude: 101° 20' 06"

During open water conditions, samples are collected by boat, midstream above the confluence with the Carrot River. The boat may be obtained from W.S.C, The Pas (204) 623-2232.

During winter conditions, samples are collected 30m from the boat launch at the Indian Reserve. Unsafe slushy conditions may exist during April and November.

STATION ESTABLISHED: May, 1974

PERIOD OF RECORD: 1974 -

STATION TYPE: Monthly (PPWB), physicals, major ions, nutrients, heavy metals, biocides, radionuclides, (GEMS)

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Spec. Cond.*	*Total Coliform*	*Fecal Coliform*	*Fecal Strep.*
WINTER	*8 - 13*	*7 - 8*	*1 - 15*	*300 - 500*	*<2 - 50*	*<2 - 20*	*<2 - 40*
SPRING	*10 - 13*	*7 - 9*	*5 - 50*	*250 - 450*	*<2 - 100*	*<2 - 50*	*<2 - 50*
SUMMER	*7 - 10*	*7 - 9*	*10 - 50*	*250 - 450*	*<2 - 50*	*<2 - 20*	*<2 - 40*
FALL	*8 - 11*	*7 - 9*	*10 - 50*	*200 - 400*	*<2 - 50*	*<2 - 20*	*<2 - 40*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1915 - 23, 1926 - 31, 1962 -

SEDIMENT DATA:

ISSUES:

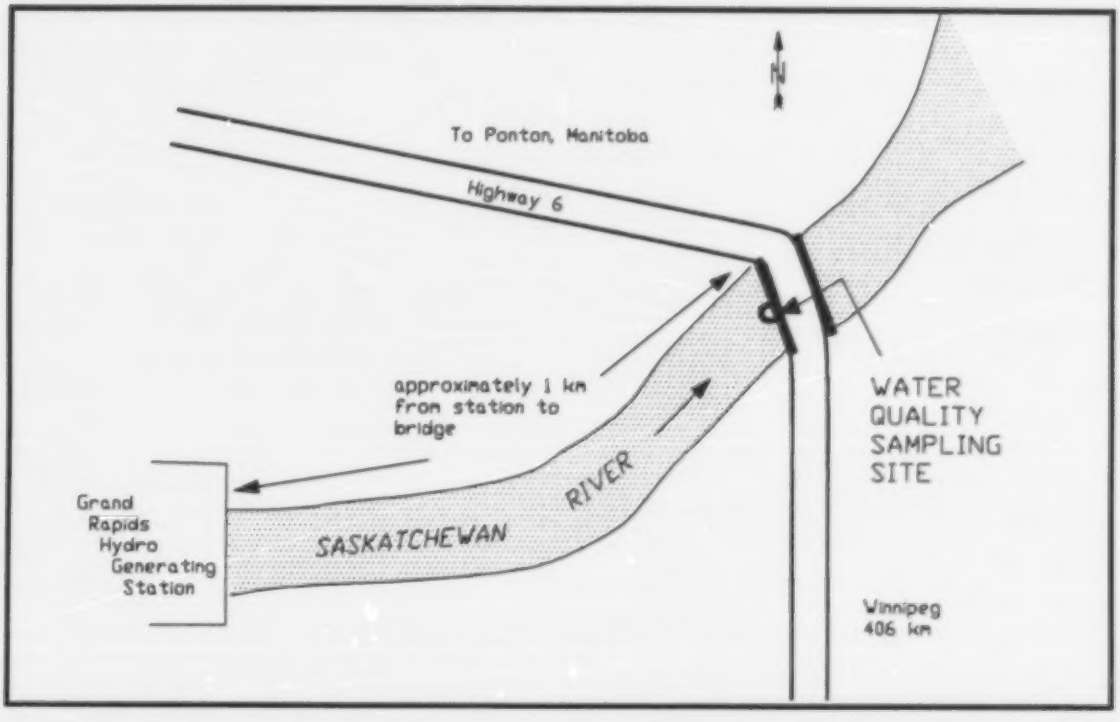
- The town of The Pas obtains its domestic water supply from this river and therefore the water quality of this river is a topic of frequent media coverage.
- Color, turbidity and herbicides are the major concerns.

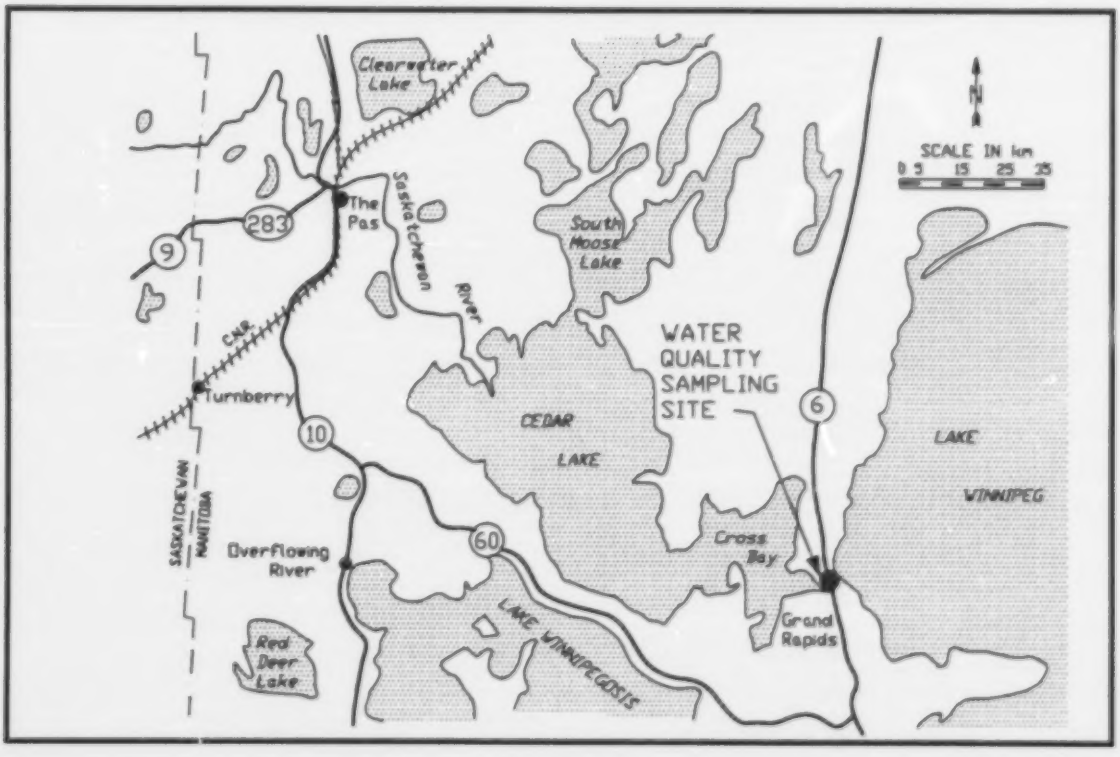
REPORTS AVAILABLE FOR THIS SITE:

- Compiled historical data - table and graphs (PPWB Annual Report).
- Overview of phosphorus, nitrogen and organic carbon (1970 - 79).
- Multimedia analyses for various metals and biocides.

PREPARED OR REVISED BY: Val Chacko **DATE**: March 31, 1987

Saskatchewan River at Grand Rapids





Saskatchewan River downstream of Grand Rapids Power Plant

NAQUADAT NUMBER: 00MA05SH0001 **WSC REFERENCE NUMBER**: 05KL001

PROJECT REFERENCE NUMBER: 313 **SUBMITTER I.D.**: 0003

LOCATION: Latitude: 53° 9' 40" Longitude: 99° 17' 10"

Sampling location is below the Grand Rapids Power Plant at Highway #6 bridge, on upstream side. Open water year round at this point.

STATION ESTABLISHED: July 23, 1969

PERIOD OF RECORD: July 23, 1969 - February 2, 1978 and February 4, 1989 -

STATION TYPE: Monthly major ions, nutrients, metals.

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Specific Conductance*
WINTER	*7 - 14*	*6.5 - 8*	*1 - 5*	*200 - 400*
SPRING	*9 - 13*	*7 - 9*	*1 - 10*	*150 - 500*
SUMMER	*7 - 11*	*7 - 9*	*1 - 10*	*250 - 500*
FALL	*9 - 14*	*7 - 9*	*1 - 10*	*250 - 500*

WSC HYDROMETRIC STATION PERIOD OF RECORD:

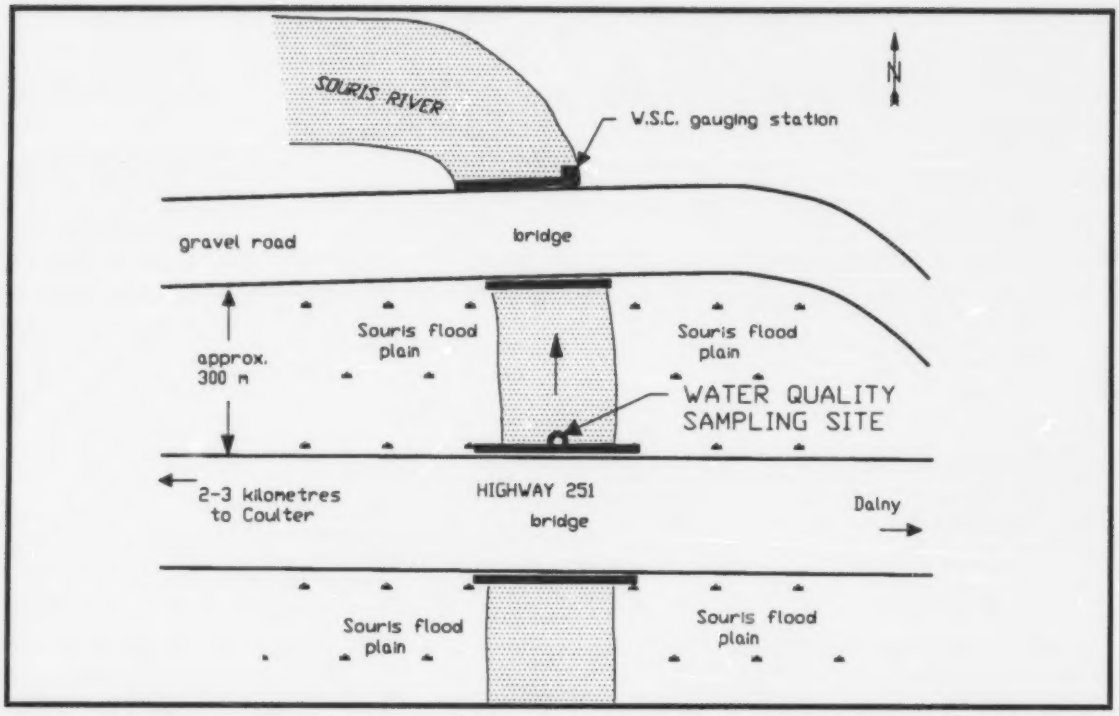
SEDIMENT DATA: Not available

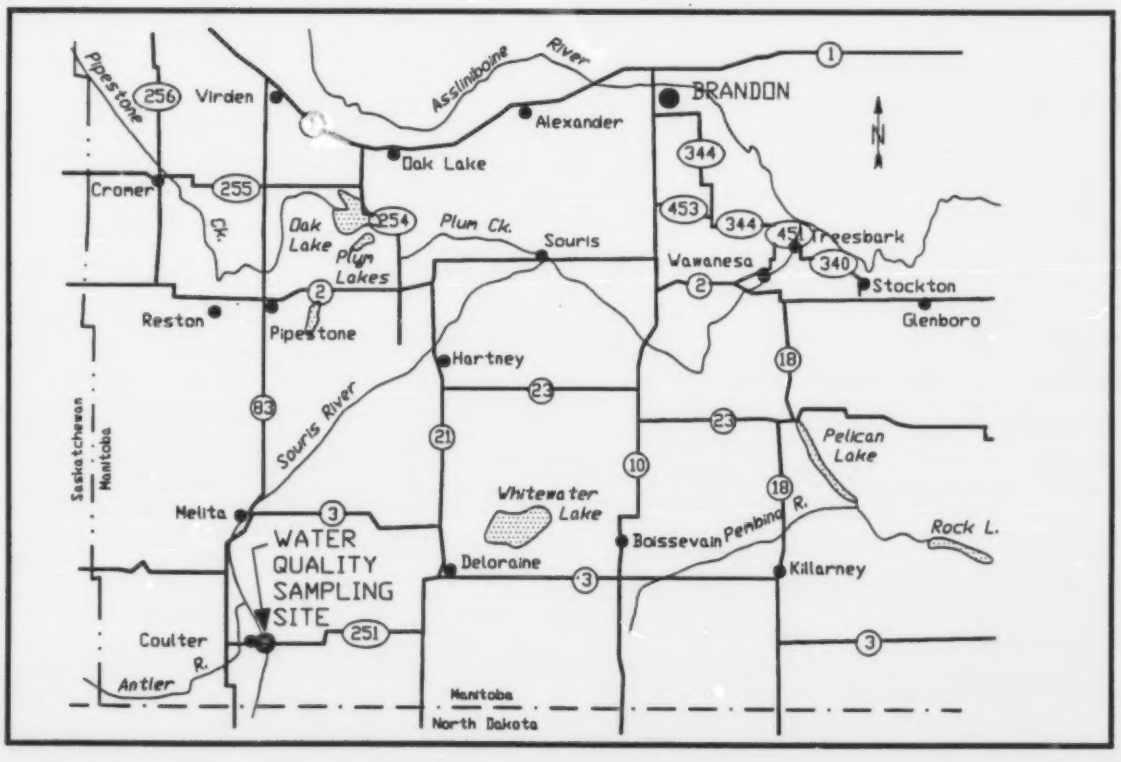
ISSUES:

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: Bob Woychuk **DATE**: December 10, 1990

Souris River at Coulter





Souris River at Coulter

NAQUADAT NUMBER: 00MA05NF0001 **WSC REFERENCE NUMBER**: 05NF016

PROJECT REFERENCE NUMBER: 313 **SUBMITTER I.D.**: 0003

LOCATION: Latitude: 49° 05' 30" Longitude: 100° 56' 50"

Sampling at bridge on Highway 251 approximately 2.5km E of Coulter. During open water, samples collected from bridge on Highway 251. During winter conditions, samples are collected from down stream of the bridge.

STATION ESTABLISHED: May, 1960

PERIOD OF RECORD: 1960 - Ongoing

STATION TYPE: Monthly, physicals, major ions, nutrients, heavy metals, biocides, radionuclides. Continuous nutrient data 1978 - 82

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Specific Cond.*	*Total Coliform*	*Fecal Coliform*
WINTER	*0 - 14*	*6 - 9*	*1 - 50*	*800 - 2500*	*< 2 - 200*	*< 2 - 100*
SPRING	*0 - 14*	*6 - 9*	*1 - 80*	*100 - 1500*	*< 2 - 500*	*< 2 - 150*
SUMMER	*0 - 14*	*7 - 10*	*1 - 80*	*300 - 1500*	*< 2 - 200*	*< 2 - 100*
FALL	*3 - 14*	*7 - 10*	*1 - 80*	*300 - 200*	*< 2 - 200*	*< 2 - 100*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1977 -

SEDIMENT DATA: 1977 -

ISSUES:

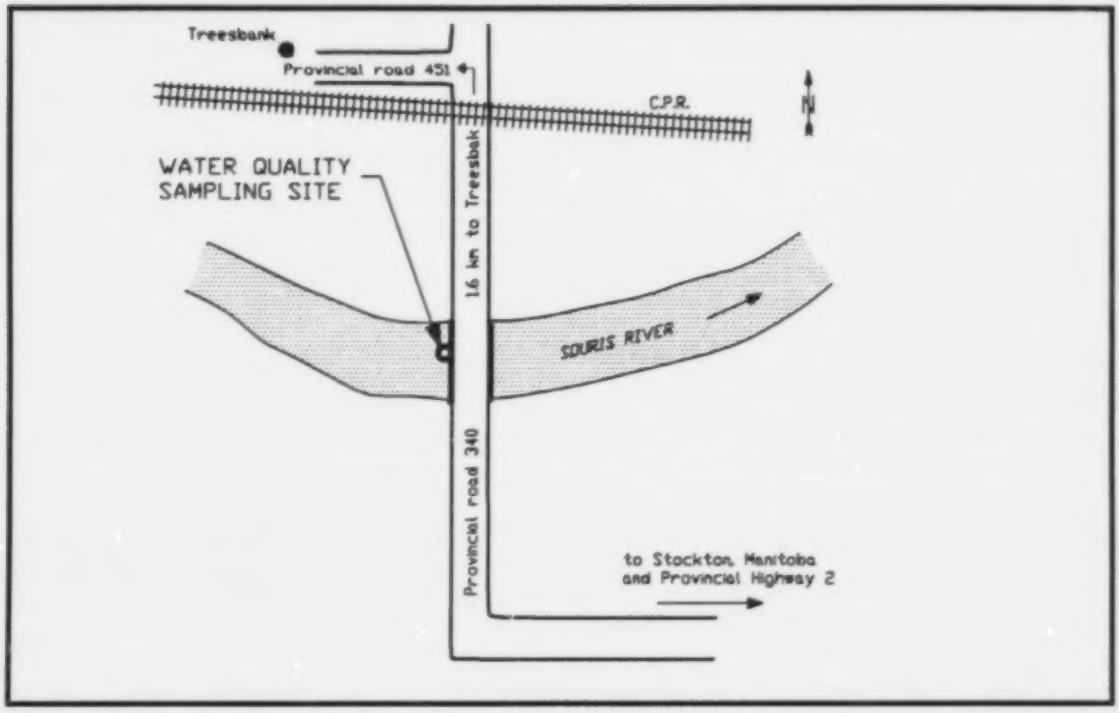
- The building of the Rafferty Dam, has caused some concern from residents residing close to the Souris River. Specific concerns regarding low flows affecting water quality has been raised.
- Garrison had been an issue, but current developments have more of an effect on the Red. The Treen Congressional Commission recommendations (1984), say no development to take place that would affect the water quality of the Souris River.
- Municipal sewage spills have occurred on the U.S. side and are a concern to the Town of Souris and Portage La Prairie which use the water as a raw domestic water supply. An agreement exists between Canada and Manitoba to monitor the Souris River at Coulter within 6 hours after notification of a sewage spill.
- Low DO and ammonia are major issues.

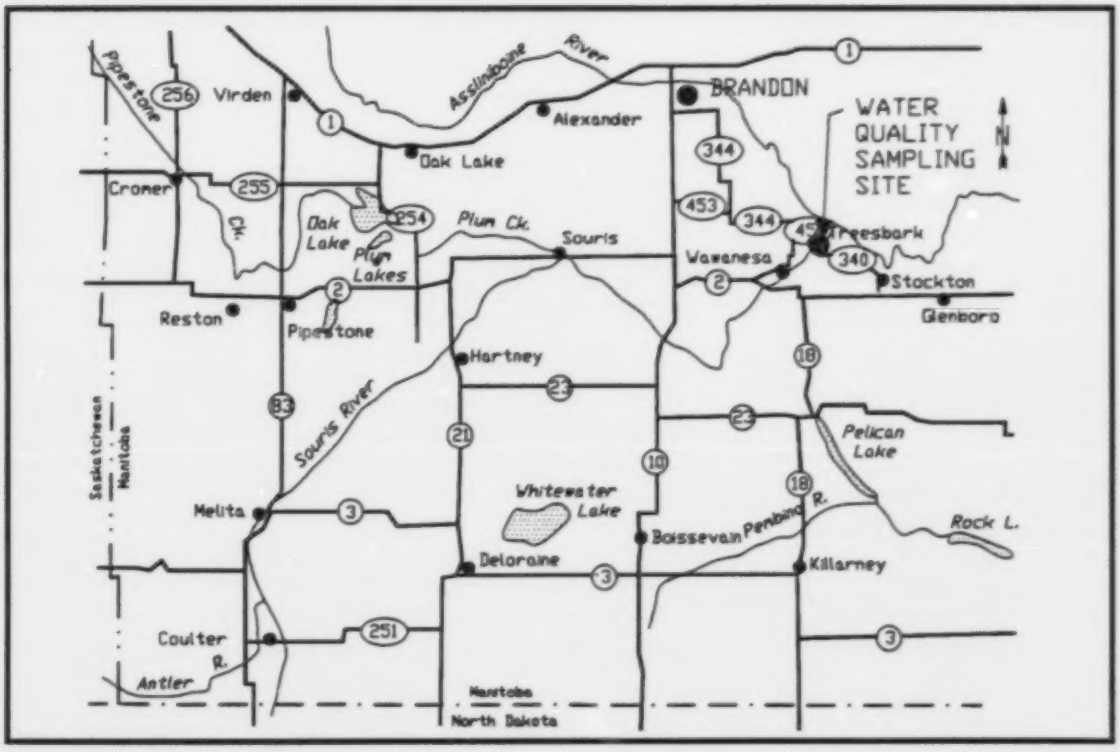
REPORTS AVAILABLE FOR THIS SITE:

- Water quality classification by the Province of Manitoba
- Souris River Basin Study Report
- Automatic water quality monitor report
- IJC report on the Garrison Diversion.
- Overview of phosphorus, nitrogen and organic carbon (1970 - 79)
- Multimedia analyses for various metals and biocides.

PREPARED OR REVISED BY: P.W. Neil **DATE**: January 29, 1989

Souris River at Treesbank





Souris River at Treesbank

NAQUADAT NUMBER: 00MA05NG0014 **WSC REFERENCE NUMBER**: ———

PROJECT REFERENCE NUMBER: 313 **SUBMITTER I.D.**: 0003

LOCATION: Latitude: 49° 37' 39" Longitude: 99° 36' 0"

Samples are collected at mid channel year round from bridge on Highway #340.

STATION ESTABLISHED: January, 1973

PERIOD OF RECORD: 1973 - 1976, 1989 - Ongoing

STATION TYPE: Monthly major ions, nutrients, heavy metals, biocides

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Spec. Cond.*	*Total Coliform*	*Fecal Coliform*
WINTER	*2.5 - 10*	*6.5 - 8*	*2 - 20*	*800 - 2400*	*< 2 - 150*	*< 2 - 150*
SPRING	*8 - 14*	*6 - 9*	*10 - 150*	*350 - 700*	*< 2 - 9000*	*< 2 - 1100*
SUMMER	*7 - 10*	*7.5 - 9*	*5 - 20*	*500 - 1000*	*20 - 9000*	*< 10 - 1100*
FALL	*8 - 12*	*7.5 - 9*	*5 - 20*	*500 - 1400*	*< 2 - 500*	*< 2 - 100*

WSC HYDROMETRIC STATION PERIOD OF RECORD:

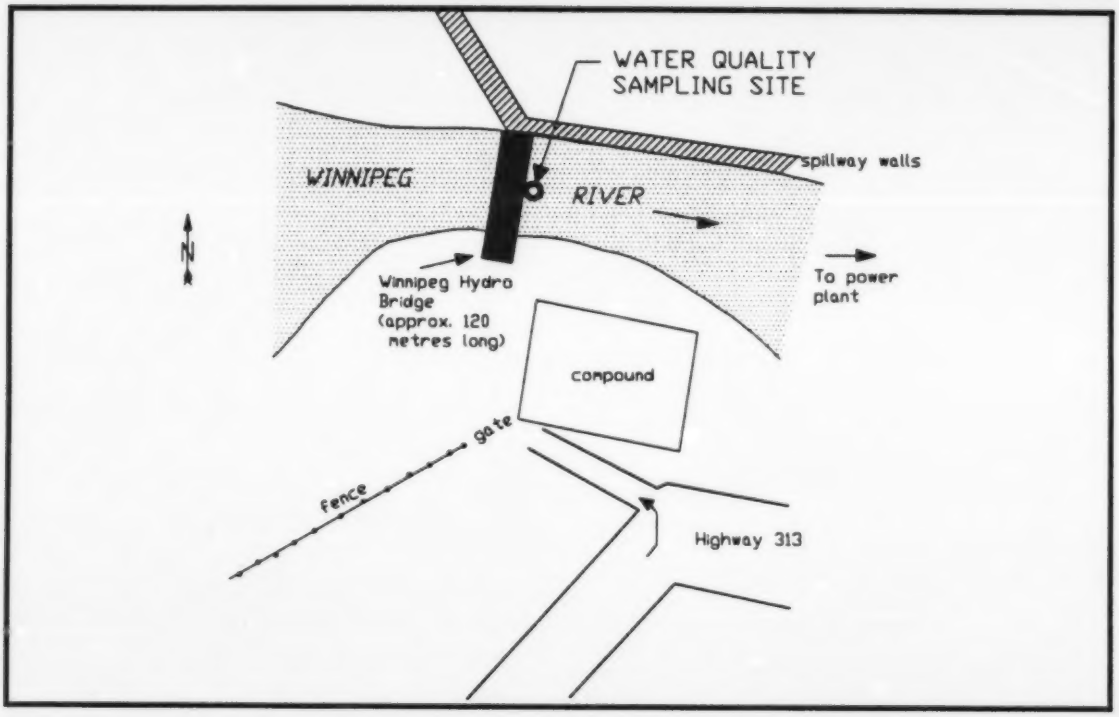
SEDIMENT DATA:

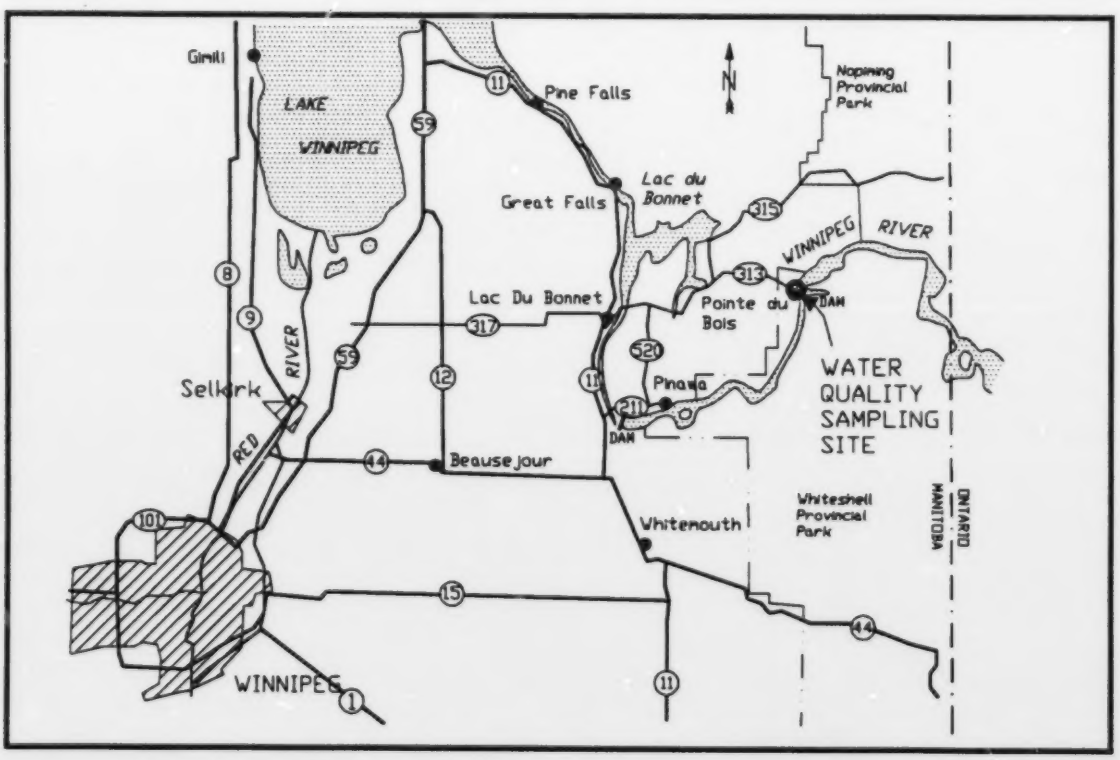
ISSUES:

REPORTS AVAILABLE FOR THIS SITE:

PREPARED OR REVISED BY: Bob Woychuk **DATE**: December 10, 1990

Winnipeg River at Pointe Du Bois





Winnipeg River at Pointe Du Bois

NAQUADAT NUMBER: 00MA05PF0022 **WSC REFERENCE NUMBER**: 05PF001

PROJECT REFERENCE NUMBER: 304 **SUBMITTER I.D.**: 0003

LOCATION: Latitude: 50° 18' 03" Longitude: 95° 33' 21"

Samples are collected from the Winnipeg Hydro Service bridge. Water is open through-out the year.

STATION ESTABLISHED: July, 1972

PERIOD OF RECORD: 1972 -

STATION TYPE: Monthly, physicals, major ions, nutrients, heavy metals, biocides.

EXPECTED FIELD OBSERVATIONS:

	DO	*pH*	*Turbidity*	*Spec. Cond.*	*Total Coliform.*	*Fecal Coliform*	*Fecal Strep.*
WINTER	*10 - 14*	*7 - 9*	*2 - 10*	*80 - 120*	*< 2 - 50*	*< 2 - 10*	*< 2 -20*
SPRING	*10 - 13*	*7 - 9*	*2 - 10*	*80 - 100*	*< 2 - 50*	*< 2 - 10*	*< 2 -20*
SUMMER	*8 - 12*	*7 - 9*	*2 - 10*	*80 - 100*	*< 2 - 50*	*< 2 - 10*	*< 2 - 20*
FALL	*10 - 13*	*7 - 9*	*2 - 10*	*80 - 100*	*< 2 - 50*	*< 2 - 10*	*< 2 - 20*

WSC HYDROMETRIC STATION PERIOD OF RECORD: 1909 - 20, 1927 -

SEDIMENT DATA: Not available

ISSUES:

- Mercury had been a major issue in the English-Wabigoon River system (a tributary of the Winnipeg River).
- The Winnipeg River is a major source of nutrient input to Lake Winnipeg

REPORTS AVAILABLE FOR THIS SITE:

- Mercury in the English-Wabigoon River System (1980)
- Overview of phosphorus, nitrogen and organic carbon (1970 - 79).
- Multimedia analyses for various metals and biocides.

PREPARED OR REVISED BY: Val Chacko **DATE**: March 31, 1987

APPENDICES

DISCONTINUED

WATER QUALITY SITES

Appendices A to C are a listing of locations where water quality data have been obtained by the Water Quality Branch. Locations are listed alphabetically within each province, and include the period of record available. The amount of data available for a particular location will vary substantially dependent upon the purpose of the site. To obtain historical water quality data, contact the appropriate District Resource Officer. The District Resource officers are listed at the beginning of each of the provincial sections.

APPENDIX A

DISCONTINUED ALBERTA WATER QUALITY SAMPLING SITES

Alderson Lake, Waterton Lakes National Park 1971

Amethyst Lake, Jasper National Park 1972

Athabasca River 1.35 Miles above Confluence with Sunwapta River, Jasper National Park 1972-76

Athabasca River about 0.5 Mile above Henry House, Jasper National Park 1972-76

Athabasca River about 2.05 Miles below Devona, Jasper National Park . . . 1972-76

Athabasca River about 4.5 Mile below Confluence with Sunwapta River, Jasper National Park 1972-76

Athabasca River above Jasper 1971-77

Athabasca River above Pelican River 1969

Athabasca River approximately 1.5 Miles below Firebag River 1969

Athabasca River at Athabasca 1960-87

Athabasca River at Entrance 1969-71

Athabasca River at Fort Mackay 1974-78

Athabasca River at Fort McMurray 1967-78

Athabasca River at Fort Point Bridge, Jasper National Park 1976

Athabasca River at Hinton 1976-74

Athabasca River at Hwy 18, near Fort Assiniboine 1971-74

Athabasca River at Hwy 93A about 3.8 Miles above mouth of Astoria River, Jasper National Park 1973-76

Athabasca River at Hwy Bridge about 2 Miles below Jasper, Jasper National Park 1972-76

Athabasca River at Smith 1971

Athabasca River at Whitecourt 1966-74

Athabasca River near Hondo 1969-74

Athabasca River West Bank Immediately in Front of the Alpine Village about 2 Miles South of Jasper 1969

Baker Creek below Railway Trestle at the Mouth, Banff National Park . . . 1975-76

Baker Creek near Mouth at Hwy 1A Bridge, Banff National Park 1972-76

Bath Creek near the Mouth, Banff National Park 1975-76

Battle River at Ponoka 1960-74

Battle River near Alliance 1971-74

Battle River near Marsden 1971-74

Bauerman Brook above Confluence with Blakiston Brook, Waterton National Park 1973-76

Bear River South of Fort Vermilion 1971-73

Beaver Creek above Maligne Lake Road Crossing, Jasper National Park 1976
Beaver Creek North of Brocket 1971-73

Belly River above Confluence of North Fork of Belly River, Waterton National Park 1974-76
Belly River at Hwy 2, Stand Off 1971-74
Belly River at North Boundary, Waterton Lakes National Park 1973-76
Belly River - St. Mary Diversion Canal 1971-73

Bench Mark Creek near Fort Smith 1970-83

Berry Creek near Mouth 1971-74

Bighorn Lake 1972

Birch River below Alice Creek 1969-78

Blakiston Brook above Confluence with Bauerman Brook, Waterton National Park 1973-76
Blakiston Brook above Canyon Church Camp, Waterton Park 1973-76
Blakiston Brook at Hwy 5, Waterton Lakes National Park 1972-76

Blindman River near Blackfalds 1966-74

Blood Indian Creek near the Mouth 1971-73

Bow Lake, Banff National Park 1972

Bow River above Bassano Dam 1967-74
Bow River above Moraine Creek, Banff National Park 1975-76
Bow River at 85th Street Bridge, Calgary 1969
Bow River at Banff 1964-74
Bow River at Bearspaw Dam 1967-74
Bow River at Brewster Creek 1971
Bow River at Cochrane 1971-87
Bow River at C.P.R. Bridge East of St. Georges I., Calgary 1969
Bow River at Crowfoot Ferry 1973-74
Bow River at Cushing Bridge, Calgary 1969
Bow River at Edmonton Trail Bridge, Calgary 1966
Bow River at Eisenhower Junction, Banff National Park 1973-76
Bow River at Graves Bridge 1971-74

Bow River at Hwy 1 above Banff, Banff National Park 1972-76
Bow River at Hwy 1 below Johnston Creek, Banff National Park 1973-76
Bow River at Hwy 36, Scandia 1971-73
Bow River at Massive, Banff National Park 1973-76
Bow River at Outlet of Bow Lake, Banff National Park 1973-76
Bow River below Carsland Dam 1967-74
Bow River below Confluence with Spray River, Banff National Park 1972-77
Bow River below Lake Louise 1971-76
Bow River below Mosquito Creek, Banff National Park 1971
Bow River near Hector Lake 1972-76
Bow River near Mouth 1967-86
Bow River near Seebe 1971-74

Boyer River at Hwy 58A about 40 Miles East of High Level 1969

Brazeau River Below Powerhouse 1971-74

Brewster Creek above Confluence with Douglas Creek near Banff 1972-74
Brewster Creek at Hwy 1 near Mouth, Banff National Park 1973-85

Buck Creek above Hwy 93 Road Crossing, Jasper National Park 1976
Buck Creek approximately 100 metres below Hwy 93, Jasper National Park 1976
Buck Creek at the Mouth, Jasper National Park 1976

Cabin Creek near Seebe, Marmot Creek Research Basin 1963-79

Cache Percotte Stream at Flume 1971-72

Cadotte River near Mouth 1969-71

Cameron Creek at Mouth, Waterton Lakes National Park 1974-75
Cameron Creek at Outlet of Cameron Lake, Waterton Lakes National Park 1973-76
Cameron Creek below Cameron Falls, Waterton Lakes National Park 1971-76
Cameron Creek SW of Crandell Lake, Waterton Lakes National Park 1973-76

Cameron Lake, Waterton Lakes National Park 1971

Caribou River East of Rocky Lane 1969-74

Cascade River above Lake Minnewanka, Banff National Park 1973-76
Cascade River at Outlet of Lake Minnewanka, Banff National Park 1971-76
Cascade River at Tunnel Mountain Road, Banff National Park 1975-76

Castle River at Hwy 3 near Cowley
Castle River near Beaver Mines 1964-77

Chinchaga River West of Paddle Prairie 1969-73

Clear River near Bear Canyon 1971-74

Clearwater River above Fort McMurray 1967-78
Clearwater River above Limestone Creek 1964-72
Clearwater River at Forestry Trunk Road 1971-73
Clearwater River at Rocky Mountain House 1964-77
Clearwater River at Upper Wingdam 1972-74

Corral Creek at Highway 1A, Banff National Park 1975

Crandell Lake, Waterton Lakes National Park 1971

Crooked Creek at Hwy 5, Waterton Lakes National Park 1972-75
Crowfoot Creek near Cluny 1970-73

Crowsnest River at Frank 1971-77
Crowsnest River East of Coleman 1964-77
Crowsnest River near Cowley 1971-73
Crowsnest River near Lundbreck 1971-73
Crowsnest River West of Coleman 1964-77

Cuthead Lake, Banff National Park 1972

Deerlick Creek near Hinton 1971-75

Elbow River at Bragg Creek 1964-77
Elbow River at McDonald Bridge 1969
Elbow River at Twin Bridges near Calgary 1971
Elbow River below Glenmore Dam, Calgary 1976-74

Eunice Creek near Hinton 1971-75

Fiddle River 5 km below Sulphur Creek 1976

Firebag River Near Mouth 1969

Fish Creek near Midnapore 1972

Forty Mile Creek near the Mouth, Banff National Park 1973-76

Galwey Creek at Hwy 6, Waterton Lakes National Park 1974-76

Ghostpine Creek near Huxley 1971-73

Ghost River at Hwy 1A near Mouth 1971-74

Grouse Lake, Also Known as Fagan Lake 1972

Harrison Lake, Banff National Park 1972

Hay River at Indian Cabins 1971-85
Hay River near Meander River 1969-74

Heart River near Nampa 1971-73

Hell-Roaring Creek at the Mouth, Waterton Lakes National Park 1973-75

Herbert Lake near Hwy 93 Northwest of Lake Louise 1971-73

Highwood River at Diebel Ranch 1964-77
Highwood River at Hwy 2 Crossing near Aldersyde 1971-74

Hines Creek near Fairview 1971-73

Horseshoe Lake, Jasper National Park 1971-73

Hotchkiss River at Hotchkiss 1969-73

Howse River 0.15 Mile above Mouth, Banff National Park 1973-76

House River near Mouth 1969

Johnston Creek at Hwy 1A Bridge, Banff National Park 1972-76

Kananaskis River above Marmot Creek, Marmot Creek Research Basin . . . 1963-78
Kananaskis River at Kananaskis 1964-74

Keg River at Keg River Cabins 1969-73

Keoma Lake 1971-72

Kneehills Creek Near Drumheller 1971-73

Knights Lake at Mouth of Dardanelles, Waterton National Park 1974-75

Ksituan River West of Spirit River 1971-74

Lake Athabasca between Potato Island and Fort Chipewyan, about 3/4 Mile South of Fort Chipewyan 1969
Lake Athabasca, Midpoint at Fort Chipewyan 1969
Lake Athabasca, Midpoint between Bustard Island and Athabasca River Delta about 15 Miles E of Fort Chipewyan 1969

Lake Claire, Northwest Bay 1969
Lake Claire, Southeast Bay 1969

Lake Edith, Jasper National Park 1971-73

Lee Creek at Beazer 1974-78
Lee Creek at Cardston 1971-74

Lesser Slave River at Slave Lake 1971-74
Lesser Slave River near Mouth, approximately 7 Miles NW of Smith 1969

Lineham Brook near Mouth, Waterton Lakes National Park 1974-75

Linnet Lake North of Waterton Lake, Waterton National Park 1972-73

Little Bow River at Hwy 25 near Turin 1971-77
Little Bow River at Hwy 23, 1 mile NW of Carmengay 1971-73

Little Herbert Lake, Banff National Park 1971-73

Little Red Deer River at Red Lodge Provincial Park 1971-74
Little Red Deer River near Cremona 1973-74
Little Red Deer River near Water Valley 1971-72

Little Smoky River at Hwy 43, Little Smoky 1969-74
Little Smoky River South of Guy 1969-74

Lobstick River at Wildwood 1971-74

Lost Lake, Banff National Park 1971

Louise Creek at lower Crossing of Lake Louise Road, Banff National Park . 1975-76
Louise Creek at upper Crossing of Lake Louise Road, Banff National Park 1975-76

Lower Carthew Lake, Waterton Lakes National Park 1971

Lower Twin Lake, Waterton Lakes National Park 1971

Lower Waterton Lake at Wishbone, Waterton National Park 1971-73
Lower Waterton Lake E-NW of Linnet Lake, Waterton National Park 1974-75
Lower Waterton Lake, South of Catholic Campsite, 300 m from North Shore, Waterton Lakes National Park 1974-75

Main Deer Creek, Deer Creek Research Basin 1971-73

Maligne River Approximately 0.2 km above the Mouth (at 6th bridge), Jasper National Park 1972-76
Maligne River below Maligne Canyon at 5th Bridge, Jasper National Park . . . 1976
Maligne River 4 km below Maligne Lake (at 2nd bridge), Jasper National Park 1976
Maligne River above Maligne Canyon at 4th Bridge Crossing, Jasper National Park 1976
Maligne River above Medicine Lake, Jasper National Park 1976
Maligne River at Outlet of Maligne Lake, Jasper National Park 1976
Maligne River at Outlet of Medicine Lake, Jasper National Park 1974-76

Marmot Creek Main Stem, Marmot Creek Research Basin 1963-79

Medicine River near Eckville 1971-74

Meikle River at Hwy 35, 5 Miles North of Hotchkiss 1969

McLeod River at Hwy 16 1969-74
McLeod River at Whitecourt 1966-74
McLeod River south of Edson at Hwy 47 1971-74

Middle Fork Creek in Cirque near Seebe, Marmot Creek Research Basin . . 1963-78
Middle Fork Creek near Seebe, Marmot Creek Research Basin 1963-79

Miette River above Geikie, Jasper National Park 1974-76
Miette River approximately 4 km above Hwy 16 Road Crossing, Jasper National Park 1976
Miette River at Hwy 16, W of Jasper, Jasper National Park 1976
Miette River at the Mouth at Hwy 93A, Jasper National Park 1972-76
Miette River below Decoigne Warden Station, Jasper National Park 1976

Milk River at Milk River 1971-74

Mistaya River .15 Mile above Mouth 1972-76

Montagneuse River near Hines Creek 1971-74

North Saskatchewan River at Devon 1977-87
North Saskatchewan River at Edmonton 1960-74
North Saskatchewan River at Fort Saskatchewan 1971-73
North Saskatchewan River at Hwy 93 about 1 Mile below Arctomys Creek, Banff National Park 1973-76
North Saskatchewan River at Hwy 93 Between Cirrus Mountain and Mount Saskatchewan, Banff National Park 1972-76
North Saskatchewan River at Lea Park 1966-74, 1982-1988
North Saskatchewan River at Lloydminister Ferry 1971-73
North Saskatchewan River at Pakan 1977-87
North Saskatchewan River at Saskatchewan Crossing, Banff National Park 1971-77
North Saskatchewan River at Saunders 1964-73
North Saskatchewan River at Secondary Road 938 1974-77
North Saskatchewan River near Drayton Valley 1971-74
North Saskatchewan River near Rocky Mountain House 1966-77

North Summit Lake, Jasper National Park 1973

Notikewin River at Manning 1969-74

Oldman River 2 miles North of Cowley 1966
Oldman River at Forestry Trunk Road 1971-72
Oldman River at Hwy 36 North of Taber 1967-86
Oldman River near Brocket 1971-73
Oldman River near Fort MacLeod 1960-74
Oldman River near Lethbridge 1966-86
Oldman River near Monarch 1966-74
Oldman River near Mouth 1971-72
Oldman River near Waldron's Corners 1964-78

Paddle River near Rochfort Bridge 1971-73

Patricia Lake near Jasper 1971-73

Peace River at Fort Vermilion 1967-74
Peace River at Peace River 1960-74

Pelican River near Mouth 1969

Pembina River at Entwistle 1966-77
Pembina River at Jarvie 1967-77
Pembina River at Manola below Paddle River 1972-73
Pembina River below Paddy Creek 1971-74

Pine Lake, North Basin, Wood Buffalo National Park 1974
Pine Lake, South Basin, Wood Buffalo National Park 1974

Pipestone River at Bow Drive, Lake Louise, Banff National Park 1975-76
Pipestone River at Hwy 1 near Mouth, Banff National Park 1972-76

Poboktan Creek above Warden Station, Jasper National Park 1976

Ponton River at Rocky Lane 1969-74

Pyramid Lake North of Jasper 1971-73

Red Creek at Hwy 4 North of Coutts 1972-73

Red Deer River at Drumheller 1960-87
Red Deer River at Forestry Trunk Road 1971-73
Red Deer River at Hwy 2 above Red Deer 1977-87
Red Deer River at Jenner Ferry 1971-73
Red Deer River at Red Deer 1960-74
Red Deer River near Sundre 1963-78

Redearth Creek at Hwy 1 Bridge, Banff National Park 1972-76

Redwater River East of Redwater 1971-74

Ribstone Creek near Edgerton 1971-73

Richardson Lake Southwest of Chipewyan Indian Reserve 1969

Ripple Creek above Ripple Lake, Jasper National Park 1976
Ripple Creek below Ripple Lake, Jasper National Park 1976
Ripple Creek at Snowmobile Tours Staff Residence Road, Jasper National Park 1976
Ripple Creek Opposite Icefields Information Centre, Jasper National Park . . . 1976

Rocky River at Hwy 16 Bridge about 0.2 Mile above Mouth, Jasper National Park 1972-76

Rosebud River at Hwy 21 near Redland 1971-74
Rosebud River at Rosedale 1974

Sage Creek near Wildhorse 1971-76

Salt River at Entrance to Wood Buffalo National Park 1969-73

Sand River near Mouth 1971-74

Sheep River at Buck Ranch (at Sandy McNabb Campgrounds) 1967-73
Sheep River at Okotoks 1971-74

Simonette River about 5 Miles South of Goodwin 1969
Simonette River near Goodwin 1971-73

Smoky River above Hells Creek 1970-74
Smoky River at Watino 1967-87
Smoky River East of Bezanson 1969-74
Smoky River near Grande Cache 1972-74

Snake Indian River about 1.2 miles above Devona Flats, Jasper National Park 1972-75

Snaring River at Hwy 16 Bridge about 0.58 Mile above the Mouth, Jasper National Park 1972-76

Snowflake Lake South of Red Deer River 1971-72

Sounding Creek near Monitor 1971-74

South Saskatchewan River at Hwy 41 1968-87
South Saskatchewan River at Medicine Hat 1960-74

Spray River 0.1 Mile above Mouth, Banff National Park 1972-76
Spray River below Confluence with Goat Creek, Banff National Park 1973-76

St. Mary River near Cardston 1971-74
St. Mary River near Lethbridge 1971-74
Steen River near Steen River 1969-74

Streeter Creek main stem near Nanton 1971-74

Sturgeon River near Mouth 1971-74

Sulphur Creek above Confluence with Fiddle River, Jasper National Park . . . 1976
Sulphur Creek above Miette Hot Springs, Jasper National Park 1976
Sulphur Creek above Miette Hot Springs Road Crossing, Jasper National Park 1976
Sulphur Creek approximately 150 m below Miette Hot Springs Road Crossing, Jasper National Park 1976
Sulphur Creek below Miette Hot Springs Road Crossing, Jasper National Park 1976

Sunwapta River above Sunwapta Falls, Jasper National Park 1971-76
Sunwapta River Approximately 6.1 km below Beauty Creek, Jasper National Park 1973-76
Sunwapta River at Athabasca Glacier 1971-76
Sunwapta River at Shivers and Goosebumps Bridge, Jasper National Park 1976
Sunwapta River below Sunwapta Lake, Jasper National Park 1976

Swan River at Kinuso 1967-74

Tangle Creek above Work Compound, Jasper National Park 1976
Tangle Creek below Work Compound, Jasper National Park 1976

Twin Creek near Seebe, Marmost Creek Research Basin 1964-79

Upper Rowe Lake, Waterton Lakes National Park 1971

Upper Waterton Lake at Bertha Bay, Waterton Lakes National Park 1972
Upper Waterton Lake at Boundary Bay, Waterton Lakes National Park 1971-2
Upper Waterton Lake at Crypt Landing, Waterton Lakes National Park 1972

Wabasca River at Wadlin Lake Road 1969-77

Wampus Creek near Hinton 1971-75

Wapiti River at Hwy 40 South of Grande Prairie 1969-77

Waskahigan River at Hwy 43 Bridge, 0.1 Mile above Little Smoky River . . 1969-74

Waterton Lake above the Dardanelles Stretch, Waterton Lakes National Park 1972-75
Waterton Lake Bosporus, Waterton Lakes National Park 1972-75
Waterton Lake at Cameron Bay, Waterton Lakes National Park 1972
Waterton Lake at International Boundary, Waterton Lakes National Park . . 1972-75
Waterton Lake at Waterton, Waterton Lakes National Park 1974-75
Waterton Lake South of Waterton, Waterton Lakes National Park 1974-75

Waterton River near Stand Off 1971-74

Whirlpool River at Hwy 93A, Jasper National Park 1972-76

Whiskey Jack Stream at Flume 1971-72

Whitemud River near Dixonville 1969-74

Willow Creek 7 miles SW of Claresholm 1971-74

Willow Creek at Hwy 2 near Nolan 1971-74

Wolf Creek at Hwy 16 Crossing 1971-74

Wolverine River near Mouth 1969

Vermilion River at Lea Park 1971-74
Vermilion River near Mannville 1964-74

APPENDIX B

DISCONTINUED SASKATCHEWAN WATER QUALITY SAMPLING SITES

Adair Creek near Mouth at Ellisboro 1970-71

Antler River, 6.4 km East of Carnduff 1971
Antler River between Carnduff and Carievale 1973

Arm River near Bethune 1970-72

Assiniboine River above Whitesand River 1968-74
Assiniboine River at Kamsack 1966-74

Avonlea Creek at Outlet of Avonlea Reservoir 1972-73

Battle Creek near U.S. Boundary, SE of Consul 1974-87

Beaver River 16.1 km below Junction of Waterhen River 1970-78
Beaver River above Beauval 1976-86

Birch River below Cumberland Marshes Dam, near Cumberland House . . . 1978-84

Boundary Reservoir 20 m from a Point on North Shore near Bay, Approaching Grid Road 1975-76
Boundary Reservoir at Centre of First Bay approximately 2.4 km North of Grid Road Bridge, South End 1975-76
Boundary Reservoir at Centre of South End, approximately 8.0 km North of Grid Road Bridge 1975
Boundary Reservoir at Grid Road Bridge, at Southern end of the Reservoir 1975
Boundary Reservoir on Centre Transect Line Perpendicular to Boat Launching Ramp, South End 1975
Boundary Reservoir on Centre Transect Line Perpendicular to First Point of Land on E. Side, 1.6 km North of House Boat Marina 1975-76
Boundary Reservoir on Centre Transect Line Perpendicular to House Boat Marina 1975-76
Boundary Reservoir on Centre Transect Line Perpendicular to Major Point of Land on W Side, 2.4 km S of Park 1975
Boundary Reservoir on Centre Transect Line Perpendicular to Pump House at North End 1975-76
Boundary Reservoir on Centre Transect Line Perpendicular to Regional Park, North End 1975-76

Buffalo Pound Lake at Hwy 2 Crossing 1968-78

Carrot River near Smoky Burn 1966-74
Carrot River near Turnberry 1973-87

Chipman River above Black Lake 1973-74

Churchill River above Dipper Rapids 1971-72
Churchill River at Island Falls 1960-74
Churchill River at Otter Rapids 1963-89
Churchill River at Outlet of Wintego 1973-74
Churchill River at Patuanak 1972-1990
Churchill River below Wasawakasik 1974-87
Churchill River below Nistowiack Lake 1973-74
Churchill River near Patuanak 1973-86

Cookson Reservoir, Lower End Near Coronach 1977-79
Cookson Reservoir, Upper End Near Coronach 1977-79

Cree Lake at Cable Bay 1971-73

Cree River at Outlet of Wapata Lake 1972-73

Cutarm Creek near Mouth 1970-72

Davin Basin 1971-72

Deerhorn Creek at Hwy 8 Bridge North of Spyhill 1971

Dillon River at Outlet of Dillon Lake 1973-74

Doghide River North of Tisdale 1968-74

Dore River, 2 km above Junction of Beaver River 1970-73

Douglas River approximately 16.1 km below Cluff Creek 1975-85

Dragline Channel below WSC Control Structure near Squaw Rapids 1979-84

Eagle Creek at Grid Road Bridge about 6.4 km W of Environ 1974-78

East Fork of Middle Poplar River, SE of Rockglen 1974-79

East Poplar River 3.2 km North of U.S. Border, 1.6 km W of Hwy 36 1974-75
East Poplar River 4.8 km East of Coronach at Hwy 36 1974-75

Echo Creek near Mouth at Hwy 10 1970-72

Ekapo Creek near Mouth 1970-72

Fahlman Creek 1.6 km South and 5.6 km West of Davin 1974

Foam Lake, Northwest End 1971

Fond du Lac River at outlet of Black Lake 1963-89

Foster River above Churchill River 1972-74

Frenchman River at the 49th Parallel 1979-87
Frenchman River at International Boundary 1960-79

Gainsborough Creek at Gainsborough 1972-74

Giekie River below Junction of Wheeler River 1971-89

Haultain River above Junction of Churchill River 1971-74

Indian Head Creek near Mouth 1970-72

Ironspring Creek at Grid Road Bridge, about 8 km South and 3.7 km East of Hwy 6, near Watson 1974

Jumping Deer Creek near Mouth 1970-72

Kaposvar Creek near Mouth 1970-72

Keely River at Outlet of Keeley Lake 1972-73
Keely River at Resource Road above Confluence with Outlet from Durocher Lake 1970-71

Kenosee Lake at Kenosee North of Clarks Beach 1971

Lac La Ronge at La Ronge 1972-74

Lake Athabasca near Crackingstone Point 1972-74

Lake Diefenbaker at Douglas Park 1970-71

Lanigan Creek near Mouth at Hwy 15 . . . . .

La Plonge River at Mission School, 2 km below Lac La Plonge 1970-71

Last Mountain Lake at Outlet at Railway Causeway 1970-74

Lewis Creek near Mouth below Imperial 1970-71

Little Kenosee Lake, North End 1971

Lodge Creek at Alberta Boundary 1971-74
Lodge Creek near Willow Creek 1975-87

Long Creek 6 km SW of Border Crossing, near Noonan, N.D., U.S. 1975-84
Long Creek at Eastern Crossing of U.S. Boundary 1972
Long Creek at Mouth above Estevan Water Treatment Plant 1975-78
Long Creek near Estevan 1960-75
Long Creek South of Torquay 1960-84

Loon Creek above Mouth at Grid Road 1970-72

McFarlane River at Outlet of Davy Lake 1969-82

Middle Fork Poplar River Southeast of Rock Glen 1974-79

Montreal River at Outlet of Bogstone Lake 1972-77

Moose Jaw River above Moose Jaw Forces Base Effluent Entry, Moose Jaw 1972
Moose Jaw River above Moose Jaw at Hwy 2 1966-74
Moose Jaw River at 8 km Dam, Moose Jaw 1972-73
Moose Jaw River at Gulf Dam 1971-73
Moose Jaw River at Hwy 6 below Milestone 1972-73
Moose Jaw River at Junction of Thunder Creek in Moose Jaw 1974
Moose Jaw River at Kingsway Bridge, Moose Jaw 1972-73
Moose Jaw River at Manitoba Street Bridge at Coronation High Pressure Dam, Moose Jaw 1972-73
Moose Jaw River at Manitoba Street Bridge at C.P.R. Dam, Moose Jaw . . 1970-73
Moose Jaw River at Neilsen's Greenhouse, Moose Jaw 1972-73
Moose Jaw River at Sioux Bridge, Moose Jaw 1972
Moose Jaw River at Wild Animal Park Bridge, Moose Jaw 1972-73
Moose Jaw River below Moose Jaw at Hwy 301, Burdick 1968-78
Moose Jaw River below Moose Jaw Effluent Entry, Moose Jaw 1972-73
Moose Jaw River below Moose Jaw Forces Base Effluent Entry, Moose Jaw 1972-73
Moose Jaw River near Eastview 1972-73
Moose Jaw River near Mouth 1970-74
Moose Jaw River West of Rouleau 1972-73

Moose Mountain Creek near Oxbow 1972-77

Mudjatik River near Forcier Lake 1972-77

Nickel Lake at Centre of Lower End 1975
Nickel Lake at Centre, Just Under Southern Most Power Line Crossing, Approximately 1.1 km North of Regional Park 1975
Nickel Lake at Centre, Perpendicular to Boat Launching Site in Park 1975-76
Nickel Lake at Centre, Perpendicular to 2nd Point of Land on East Side of Lake, North of Boat Launching Site 1975-77
Nickel Lake at Southern End 1975-76
Nickel Lake in Centre of First Bay, East of Rinfret Creek Confluence, North End 1975

North Saskatchewan River at Cecil Ferry 1968-79
North Saskatchewan River at Hwy 3 Bridge 1971-82
North Saskatchewan River AT Hwy 5 near Borden 1968-74
North Saskatchewan River at North Battleford 1960-74
North Saskatchewan River at North Cecil Ferry 1974
North Saskatchewan River at Prince Albert 1966-78
North Saskatchewan River East of Prince Albert 1968-74

Notukeu Creek near Gravelbourg 1966-74

Pearl Creek near Killaly at Hwy 22 1970
Pearl Creek near Mouth at Hwy 47 1970

Pheasant Creek near Mouth 1970-72

Porcupine River at Outlet of Grove Lake 1973-74
Porter Lake at Crew Cabin 1972-73

Qu'Appelle River above Pasqua Lake 1969-83
Qu'Appelle River above Round Lake 1970-72
Qu'Appelle River above Wascana Creek 1968-74
Qu'Appelle River at Grid Road North of Keeler 1970-72
Qu'Appelle River at Hwy 6 Crossing 1968-79
Qu'Appelle River at Hwy 9 Bridge 1968-78
Qu'Appelle River at Hwy 47 North of Grenfell 1968-74
Qu'Appelle River at Lumsden 1964-74
Qu'Appelle River at Outlet of Buffalo Pound Lake 1968-74
Qu'Appelle River at Outlet of Katepwa Lake 1968-83
Qu'Appelle River at Outlet of Mission Lake near Lebret 1970-73
Qu'Appelle River at Outlet of Pasqua Lake at Hwy 210 1970-74
Qu'Appelle River at Qu'Appelle Dam 1968-74
Qu'Appelle River at Tantallon 1960-74

Qu'Appelle River below Craven 1968-74
Qu'Appelle River below Crooked Lake at Marieval 1970-74
Qu'Appelle River below Ft Qu'Appelle at Hwy 10 above Mission Lake . . . 1970-74

Red Deer River at Erwood 1966-87

Reed Lake, 1.6 km South of Morse 1971

Reindeer River at Outlet of Reindeer Lake at Whitesand Dam 1967-77
Reindeer River near the Mouth 1973-74

Roughbark Creek at Mouth, approximately 2.4 km West of Midale 1975-77

Sandy Beach Creek at Hwy 56 below Balcarres 1970-71

Saskatchewan River at Hwy 35 Bridge, Nipawin 1968-74
Saskatchewan River below Squaw Rapids, below Tobin Lake Reservoir . . 1967-74
Saskatchewan River North of Gronlid 1968-74

Short Creek at Mouth on Grid Road West of Roche Percee 1975-76

Souris River at Grid Road Bridge, 1.5 km South of Lewvan 1976
Souris River at Grid Road Bridge, 3.2 km above Weyburn 1975-76
Souris River at Grid Road Bridge, approximately 2.4 km South of Shand . . 1975-76
Souris River at Grid Road Bridge, approximately 8.9 km SE of Weyburn below Effluent 1975-76
Souris River at Hwy 18 Bridge, above Long Creek 1975-76
Souris River at Hwy 39, 1.0 Miles East of Roche Percee 1978-79
Souris River at Hwy 39, near U.S. Border 1973
Souris River below Nickel Lake Dam, approximately 46 m South of Dam . . 1975-76
Souris River below Roughbark Creek at Grid Road Bridge approximately 2.4 km SE of Midale 1975-76
Souris River near Estevan 1960-74
Souris River near Glen Ewen 1960-87
Souris River South of Bienfait 1968-75

Souris River West of Halbrite 1968-75

South Saskatchewan River 16.1 km above Saskatoon 1972-73
South Saskatchewan River at Birch Hills Ferry 1968-78
South Saskatchewan River at Clarkboro Ferry 1968-78
South Saskatchewan River at Gabriel Ferry 1968-74
South Saskatchewan River at Hwy 3 SE of Prince Albert 1978-79
South Saskatchewan River at Hwy 15 near Outlook 1968-74
South Saskatchewan River at Saskatchewan Landing 1970-74
South Saskatchewan River at Saskatoon 1960-74

South Saskatchewan River at St. Louis 1966-74
South Saskatchewan River near Lemsford 1965-74

Squaw Coulee Creek near Willow Creek 1975-78

Swift Current Creek above Swift Current 1968-74
Swift Current Creek at Swift Current 1966-74
Swift Current Creek at Waldeck 1968-74
Swift Current Creek near Stewart Valley 1968-78

Tazin Lake near Outlet of Tazin River 1973

Thompson Creek near Mouth below Sintaluta 1970-71

Thunder Creek above Moose Jaw 1970-72
Thunder Creek at Feedlot 1971
Thunder Creek at Mouth 1972-73
Thunder Creek under Viaduct, Moose Jaw 1972

Torch River near Love 1966-74

Wascana Creek above Qu'Appelle River 1965-78
Wascana Creek above Regina Lagoon at Risks Farm 1970-72
Wascana Creek at Albert Street Bridge, Regina 1972
Wascana Creek at Broad Street Bridge, Regina 1972
Wascana Creek at Dewdney Avenue Bridge, Regina 1972
Wascana Creek at Hwy 1 By-Pass, Regina 1972
Wascana Creek at Old Crossing 1968-74
Wascana Creek at Pasqua Street Bridge, Regina 1972
Wascana Creek below Lagoon and above Old Crossing (Sherwood Forest) 1972
Wascana Creek near Richardson at East-West Line Road 1970-72

Waterbury Lake at Crew Cabin 1972-74

Watershed A, Swift Current 1971-72
Watershed A1, Swift Current 1971-72
Watershed A2, Swift Current 1971-72
Watershed A3, Swift Current 1971-72
Watershed A4, Swift Current 1971-72
Watershed B, Swift Current 1971

Wathaman River below Wathaman Lake 1972-77

West Poplar River near International Boundary 1975-79

Wheeler River below Russel Lake *1973*

Whitesand River above Assiniboine River *1968-73*
Whitesand River at Hwy 5 Bridge East of Canora *1968-74*
Whitesand River at Hwy 9 North of Garlitz *1968-74*
Whitesand River North of Springside *1968-74*

Wollaston Lake at Ross Channel *1972-82*
Wollaston Lake at Trading Post *1971-72*

Wood River near Gravelbourg *1969-74*
Wood River near Lafleche *1969-74*
Wood River South of Coderre *1975-77*

APPENDIX C

DISCONTINUED MANITOBA WATER QUALITY SAMPLING SITES

Aiken River Inlet to Split Lake	1987-89
Antler River near Coulter at Hwy 251	1963-84
Assiniboine River 0.8 km above Treesbank Ferry above Souris River	1973-75
Assiniboine River at Brandon	1960-78
Assiniboine River at Bridge on Hwy 100 near Chareswood	1971-78
Assiniboine River at Portage La Prairie	1960-75
Assiniboine River near Rivers Camp	1962-74
Assiniboine River West of Russel at Hwy 4	1960-74
Badger Creek at Cartwright	1963-84
Barrington River West of Opachuanau Lake	1972-74
Berens River at Mouth, Berens River	1969
Berens River at Outlet of Long Lake	1969-74
Black River at Hwy 304 Bridge near Manigotagan	1969
Bosshill Creek at Outskirts of Elkhorn Off Hwy 256, 4.8 km South of Hwy 1	1971
Brokenhead River at Hwy 59 Bridge near Scanterbury	1969
Brokenhead River near Beausejour	1970-74
Burntwood River at Inlet to Split Lake	1987-89
Burntwood River at Outlet to Split Lake	1987-89
Burntwood River above Threepoint Lake	1971-74, 1977-89
Churchill River above Granville Falls	1971-78
Churchill River above Opachuanau Lake	1975-78
Churchill River at Fort Churchill Fresh Water Intake	1960-75
Churchill River below Fiddler Lake	1969-78
Churchill River near Leaf Rapids	1972-74
Cross Lake below West Channel of Nelson River	1973-74
Crystal Creek at Crystal City	1963-73

Cypress Creek at Highway 34 1963-77

Dauphin River, 8 km Upstream of Anama Bay 1968-78

Devil Creek South of Libau 1969

Fairford River near Fairford 1967-74

Fisher River at Bridge off Hwy 224 North of Dallas 1969-74

Footprint River above Footprint Lake 1987-89
Footprint River above Threepoint Lake 1971-74

Gainsborough Creek at Hwy 83, 1.92 km above Mouth
Gainsborough Creek at Melita 1964-73

Gauer River above Thorsteinson Lake 1971-74

Gods River at Outlet of Gods Lake 1967-78

Graham Creek at Hwy 83 Bridge 1975-76

Grass River above Standing Stone Falls 1972-74

Icelandic River at Hwy 8 Bridge South of Riverton 1969

Jack River above Norway house (West Channel) 1987-89

Jackson Creek 3.2 km North of Melita off Hwy 83 1975-76

Kettle River near Gillam 1972-73

Lake Winnipeg at Victoria Beach 1961-74

Limestone River near Bird 1972

Little Beaver River above Junction with the Churchill River 1971-74

Little Churchill River above Recluse Lake 1971-74

Minnedosa River near Rivers 1962-74

Mossy River near Outlet of Lake Dauphin 1967-78

Nelson River (East Channel) at Warrens Landing 1969-72
Nelson River (West Channel) at Kispachewuk Rapids 1972-73
Nelson River (West Channel) at Warrens Landing 1969-77
Nelson River above Bladder Rapids 1971-77
Nelson River at Cross Lake 1972-74
Nelson River at Eves Falls 1972-73
Nelson River at Kelsey Generating Station 1965-78
Nelson River at Norway House 1972-74
Nelson River at Outlet of Split Lake 1972-73, 1987-89
Nelson River below Confluence with Grass River 1987-89
Nelson River below Sea River Falls 1971-72, 1987-89
Nelson River below Sipiwesk Lake 1972-74
Nelson River near Mouth (above Weir River) 1979-87

Netley Creek at Hwy 9 Bridge at Petersfield 1969

North Seal River below Stoney Lake 1972-74

O'Hanly River at Hwy 304 Bridge near Pine Falls 1969

Oldman River above Northern Indian Lake 1971-74

Osier (Willow) Creek at Hwy 8 bridge near Gimli 1969-73

Overflowing River at Hwy 10 1974-84

Pembina River near Killarney 1962-74
Pembina River near Swan Lake 1962-74

Pigeon River at Outlet of Round Lake 1969-74

Pine Creek Diversion at Hwy 89 1972-85

Plum Creek at Mouth, Souris 1975-76

Poplar River at Outlet of Weaver Lake 1969-74

Qu'Appelle River at St. Lazare 1969-75

Rat River above Threepoint Lake 1971-74, 1987-89

Red Deer River near Mouth at Lake Winnipegosis 1967-74

Sandy River at Hwy 304 Bridge near Manigotagan 1969

Sasaginnigak Lake 1970

Saskatchewan River at The Pas 1961-74

Seal River below Great Island 1972-78

Smith Creek at Bridge near Confluence 1971

Snowflake Creek at Hwy 201 at Snowflake 1974-77

Souris River at Hwy 3, Melita 1975-76
Souris River at Hwy 344, below Wawanesa 1975-76
Souris River at Hwy 345 Bridge 1975-76
Souris River at Hwy 348 Bridge 1975-76
Souris River at Hwy 454 Bridge 1975-76
Souris River at Hwy 747, Napinka 1975
Souris River at Souris 1973-76
Souris River at Wawanesa Dam, Manitoba 1962-78

South Seal River above Fox Lake 1972-74

Southern Indian Lake above Missi Falls 1973-78
Southern Indian Lake at South Indian Lake 1972-73

Split Lake at Split Lake 1972-74

Sprauge Creek near Sprague 1972-78

Swan River at Hwy 10 1974-84
Swan River at Minitonas Lake 1966-74

Taylor River near Thompson 1971-74

Wanipigon River below English Brook above Currie Landing near Manigotagan 1969

Waterhen River below Waterhen 1966-78

Wavey Creek at Hwy 9 Bridge near Petersfield 1969

Whitemud Creek at Cartwright 1963-73

Whitemud River near Woodside 1967-74

Winnipeg River at Pine Falls Inlet of Water Station *1973*
Winnipeg River at Slave Falls *1966-74*
Winnipeg River below Pine Falls Power Plant near Pine Falls *1960-74*

Woody River at Hwy 10 . . . . . *1974-84*